D-Link®

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User Manual

Wireless N300 Cloud VPN Router

DIR-640L

Preface

D-Link reserves the right to revise this publication and to make changes in the content hereof without obligation to notify any person or organization of such revisions or changes.

Manual Revisions

Revision	Date	Description
1.0	September 25, 2012	• Initial release

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Package Contents

DIR-640L Wireless N300 Cloud VPN Router

Ethernet Cable

Two Detachable Antennas

Power Adapter

Optional Wall-Mount Kit

If any of the above items are missing, please contact your reseller.

Note: *Using a power supply with a different voltage rating than the one included with the DIR-640L will cause damage and void the warranty for this product.*

System Requirements

Network Requirements	• An Ethernet-based Cable or DSL modem • IEEE 802.11n or 802.11g wireless clients • IEEE 802.11a wireless clients • 10/100 Ethernet
Web-based Configuration Utility Requirements	**Computer with the following:** • Windows®, Macintosh, or Linux-based operating system • An installed Ethernet adapter **Browser Requirements:** • Internet Explorer 6 or higher • Firefox 3.0 or higher • Safari 3.0 or higher • Chrome 2.0 or higher **Windows® Users:** Make sure you have the latest version of Java installed. Visit www.java.com to download the latest version.

Introduction

TOTAL PERFORMANCE
Combines award winning router features and IEEE 802.11a/g/n wireless technology to provide the best wireless performance.

TOTAL SECURITY
The most complete set of security features including Active Firewall and WPA/WPA2 to protect your network against outside intruders.

TOTAL COVERAGE
Provides greater wireless signal rates even at farther distances for wireless coverage in otherwise hard-to-reach areas.

ULTIMATE PERFORMANCE
The D-Link Wireless N300 Cloud VPN Router (DIR-640L) is a 802.11n/802.11a compliant device that delivers real world performance of up to 14x faster than an 802.11g wireless connection (also faster than a 100Mbps wired Ethernet connection). Create a secure wireless network to share photos, files, music, video, printers, and network storage throughout your home. Connect the DIR-640L router to a cable or DSL modem and share your high-speed Internet access with everyone on the network. In addition, this Router includes a Quality of Service (QoS) engine that keeps digital phone calls (VoIP) and online gaming smooth and responsive, providing a better Internet experience.

EXTENDED WIRELESS COVERAGE
Powered by Wireless N technology, this high performance router provides superior home coverage throughout your home while reducing dead spots. The router is designed for use in bigger homes and for users who demand higher performance networking. Add a Wireless N notebook or desktop adapter and stay connected to your network from virtually anywhere in your home.

TOTAL NETWORK SECURITY
The Wireless N router supports all of the latest wireless security features to prevent unauthorized access, be it from over the wireless network or from the Internet. Support for WPA/WPA2 standards ensure that you'll be able to use the best possible encryption method, regardless of your client devices. In addition, this router utilizes dual active firewalls (SPI and NAT) to prevent potential attacks from across the Internet.

* Maximum wireless signal rate derived from IEEE Standard 802.11a, 802.11g and 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

Features

- **Faster Wireless Networking** - The DIR-640L provides up to 300Mbps* wireless connection with other 802.11n wireless clients. This capability allows users to participate in real-time activities online, such as video streaming, online gaming, and real-time audio. The performance of this 802.11n wireless router gives you the freedom of wireless networking at speeds 14x faster than 802.11g.

- **Compatible with 802.11b/g/n Devices** - The DIR-640L is still fully compatible with the IEEE 802.11b, 802.11g, and 802.11n standards, so it can connect with existing 802.11b, 802.11g, and 802.11n PCI, USB, and Cardbus adapters.

- **Advanced Firewall Features** - The Web-based user interface displays a number of advanced network management features including:

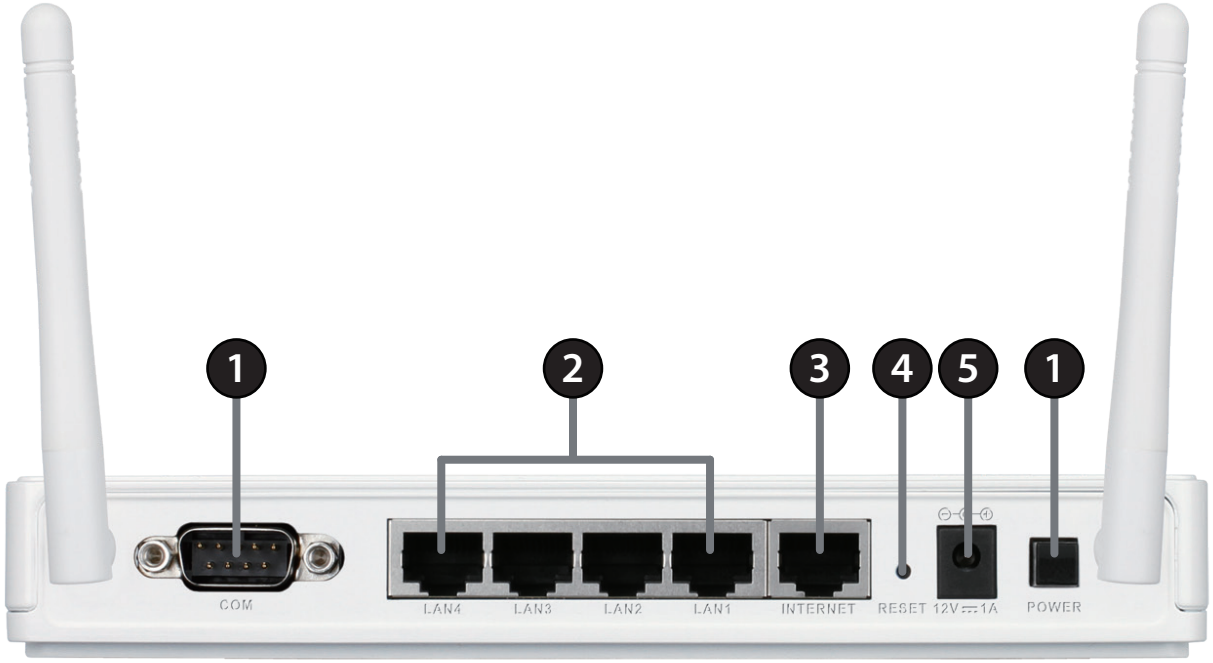
    - **Secure Multiple/Concurrent Sessions** - The DIR-640L can pass through VPN sessions. It supports multiple and concurrent IPSec and PPTP sessions, so users behind the DIR-640L can securely access corporate networks.

- **User-friendly Setup Wizard** - Through its easy-to-use Web-based user interface, the DIR-640L lets you control what information is accessible to those on the wireless network, whether from the Internet or from your company's server. Configure your router to your specific settings within minutes.

* Maximum wireless signal rate derived from IEEE Standard 802.11g, 802.11a, and 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental conditions will adversely affect wireless signal range.

Hardware Overview

Back



1	COM Port	RS-232 COM port for serial port communication and legacy device connectivity.
2	LAN Ports (1-4)	Connect 10/100 Ethernet devices such as computers, switches, and NAS.
3	Internet Port	The auto MDI/MDIX Internet port is the connection for the Ethernet cable to the cable or DSL modem.
4	Reset Button	Pressing the Reset button restores the router to its original factory default settings.
5	Power Receptor	Receptor for the supplied power adapter.
6	Power Button	Turns the device On/Off.

Hardware Overview

Front

1	Power LED	A solid light indicates a proper connection to the power supply.
2	Internet LED	A solid light indicates connection on the Internet port. This LED blinks during data transmission.
3	WLAN LED	A solid light indicates that the 2.4GHz wireless segment is ready. This LED blinks during wireless data transmission.
4	LAN LEDs (1-4)	A solid light indicates a connection to an Ethernet-enabled computer on ports 1-4. This LED blinks during data transmission.

* The USB port is currently inactive.

Installation

This section will walk you through the installation process. Placement of the router is very important. Do not place the router in an enclosed area such as a closet, cabinet, or in the attic or garage.

Before you Begin

- Please configure the router with the computer that was last connected directly to your modem.
- You can only use the Ethernet port on your modem. If you were using the USB connection before using the router, then you must turn off your modem, disconnect the USB cable and connect an Ethernet cable to the Internet port on the router, and then turn the modem back on. In some cases, you may need to call your ISP to change connection types (USB to Ethernet).
- If you have DSL and are connecting via PPPoE, make sure you disable or uninstall any PPPoE software such as WinPoet, Broadjump, or Enternet 300 from your computer or you will not be able to connect to the Internet.

Wireless Installation Considerations

The D-Link wireless router lets you access your network using a wireless connection from virtually anywhere within the operating range of your wireless network. Keep in mind, however, that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

1. Keep the number of walls and ceilings between the D-Link router and other network devices to a minimum - each wall or ceiling can reduce your adapter's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.

2. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.

3. Building Materials make a difference. A solid metal door or aluminum studs may have a negative effect on range. Try to position access points, wireless routers, and computers so that the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.

4. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.

5. If you are using 2.4GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone in not in use.

Wall-Mount Kit Installation

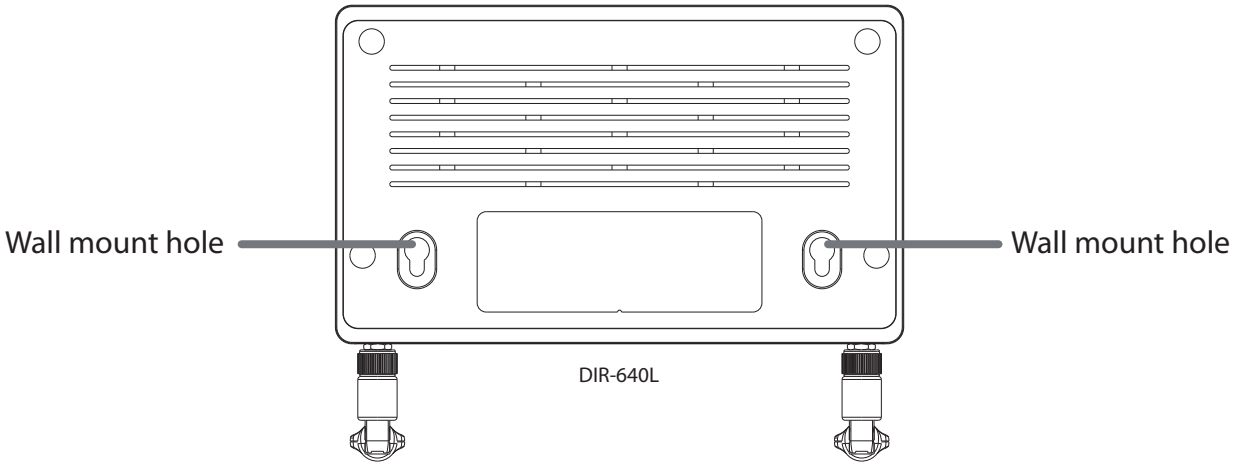
The wall-mount kit includes the following items:

- Two 2 cm screws
- Two screw anchors
- One attachment plate

Step 1. Align the attachment plate to your preferred position, and mark the hole positions on the wall, preferably after you locate one of the studs in the wall.

Step 2. Poke holes into the wall and insert the screw anchors where there is no stud. Check the screw anchors are securely in place.

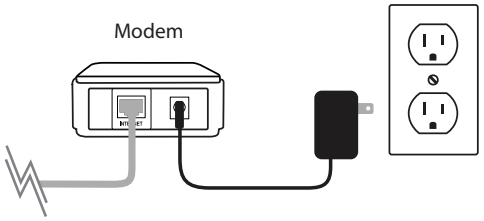
Step 3. Securely screw down the attachment plate on the wall.



Step 4. Hang the router on the wall by sliding the tops of the screws through the holes on the bottom of the router and then slide to lock into position. Confirm the the router is firmly in place.

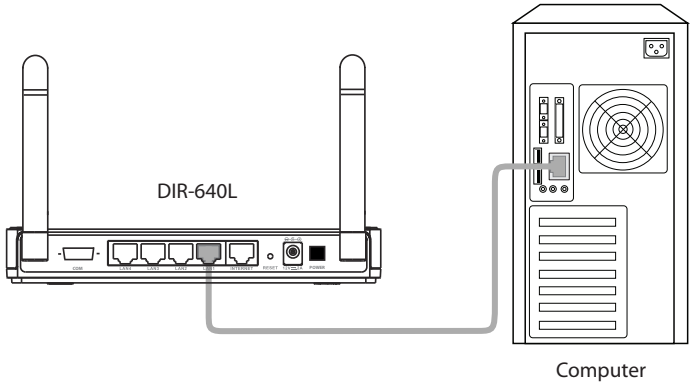
Hardware Setup

1. Turn off and unplug your cable or DSL broadband modem. This is required.

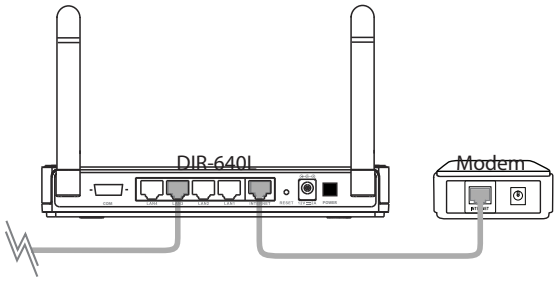


2. Position your router close to your modem and a computer. Place the router in an open area of your intended work area for better wireless coverage.

3. Unplug the Ethernet cable from your modem (or existing router if upgrading) that is connected to your computer. Plug it into the blue port labeled 1 on the back of your router. The router is now connected to your computer.

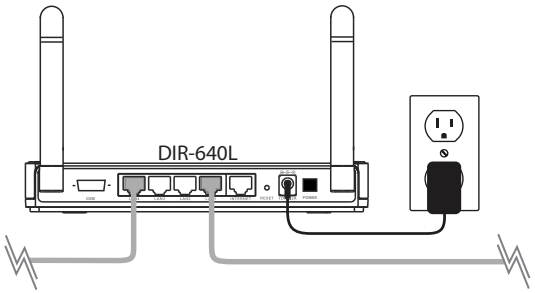


4. Plug one end of the included blue Ethernet cable that came with your router into the yellow port labeled INTERNET on the back of the router. Plug the other end of this cable into the Ethernet port on your modem.



5. Reconnect the power adapter to your cable or DSL broadband modem and wait for two minutes.

6. Connect the supplied power adapter into the power port on the back of the router and then plug it into a power outlet or surge protector. Press the power button and verify that the power LED is lit. Allow 1 minute for the router to boot up.

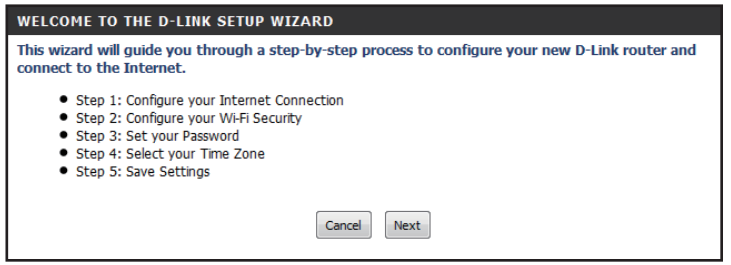


7. If you are connecting to a Broadband service that uses a dynamic connection (not PPPoE), you may be online already. Try opening a web browser and enter a web site. If you connect, you are finished with your Internet setup. Please skip to page 13 to configure your router and use the manual setup procedure to configure your network and wireless settings. If you did not connect to the Internet, use the D-Link Setup Wizard (refer to page 15).

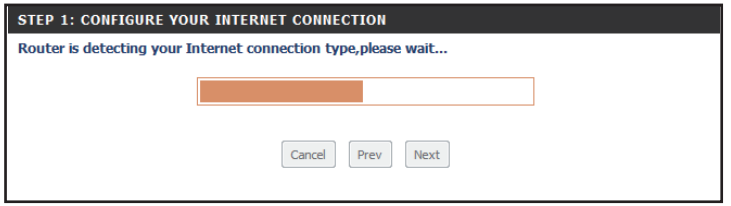
Configuration
Web Setup Wizard

Open your web browser and the setup wizard will automatically launch.

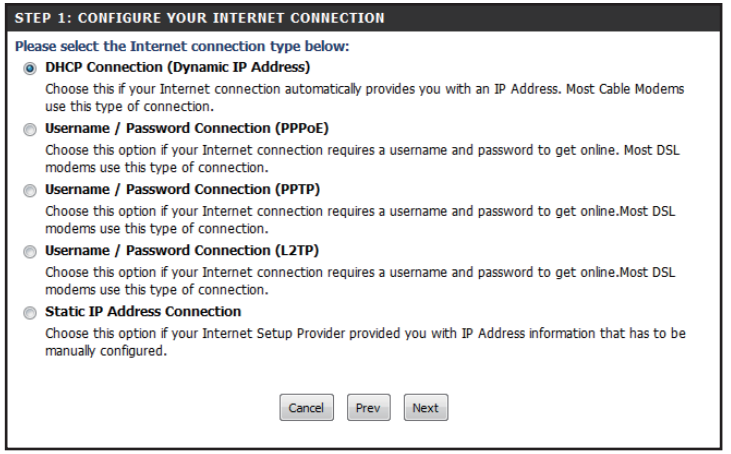
Step 1: The Welcome screen will appear. Click **Next** to continue.



Step 2: The router will automatically detect your Internet connection type.

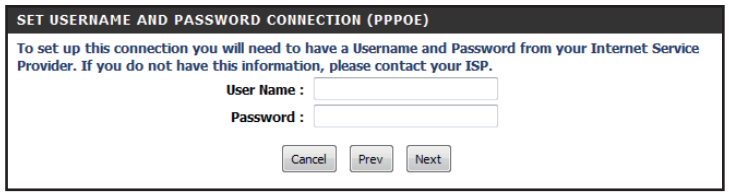


Step 3: If the router could not automatically detect your connection type, select your connection type and click **Next** to continue.

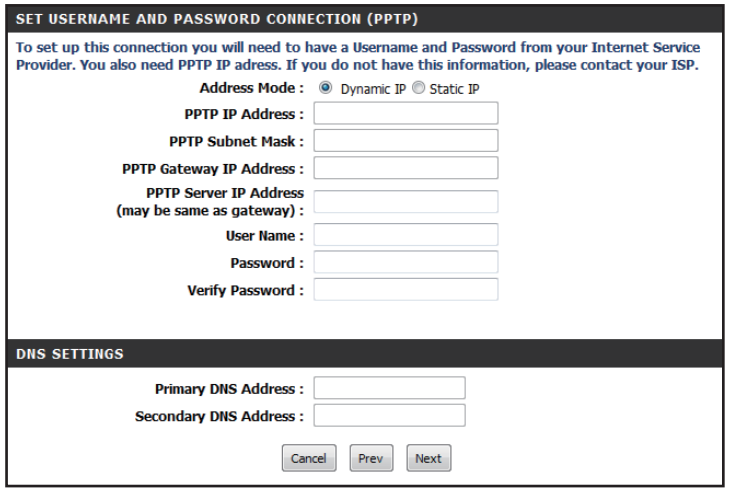


If you selected PPPoE, enter your PPPoE username and password. Click **Next** to continue.

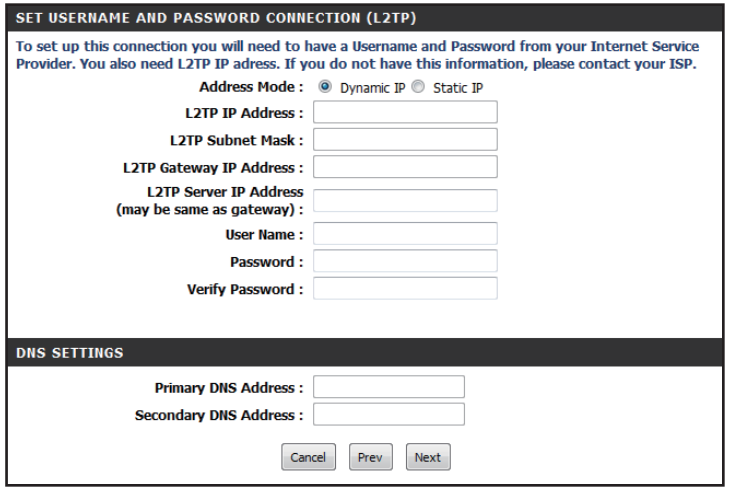
Note: *Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.*



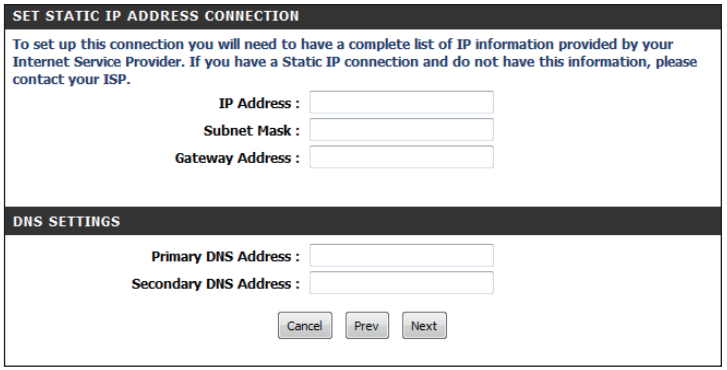
If you selected PPTP, enter your PPTP settings supplied by your ISP and your PPTP username and password. Click **Next** to continue.



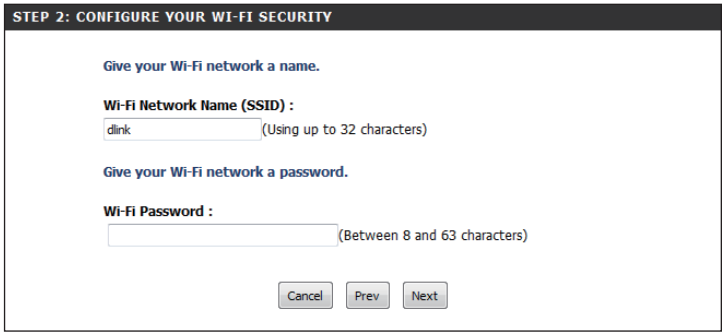
If you selected L2TP, enter your L2TP settings supplied by your ISP and your L2TP username and password. Click **Next** to continue.



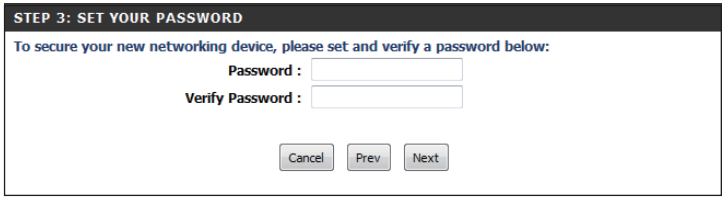
If you selected Static, enter your network settings supplied by your Internet provider. Click **Next** to continue.



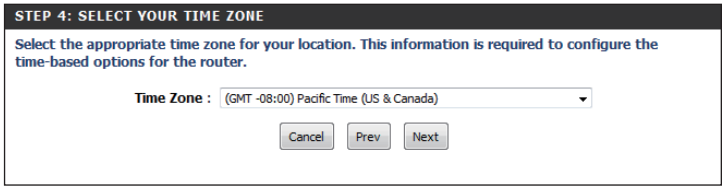
Step 4: Create a name for your wireless network (SSID), create a password for your wireless network (Wi-Fi password), and then click **Next** to continue.



Step 5: Create a new password and then click **Next** to continue.

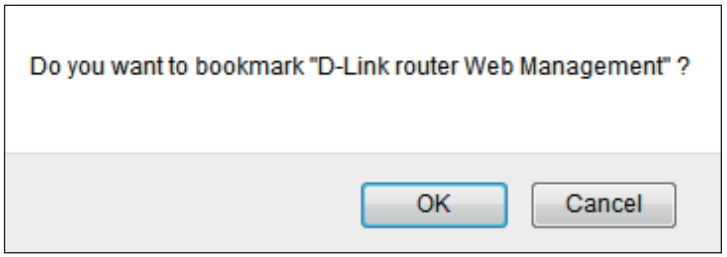


Step 6: Select your time zone from the drop-down menu and then click **Next** to continue.



Step 7: Your setup is complete. Click **Save** to continue.

Step 8: You may bookmark the router's web UI by clicking **OK**. If you do not want to bookmark the link, click **Cancel**.

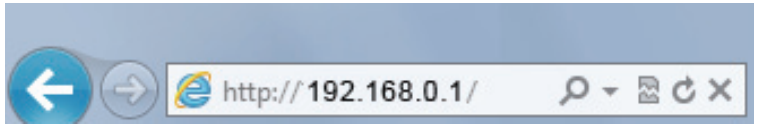


The router will reboot. Please allow 1-2 minutes.

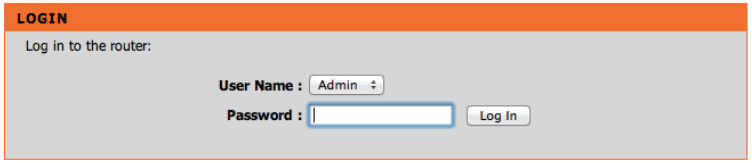
Close your browser window and reopen it to test your Internet connection. It may take a few tries to initially connect to the Internet.

Web-based Configuration Utility

To access the configuration utility, open a web-browser such as Internet Explorer and enter the IP address of the router (**http://192.168.0.1** or use **http://dlinkrouter.local.**).

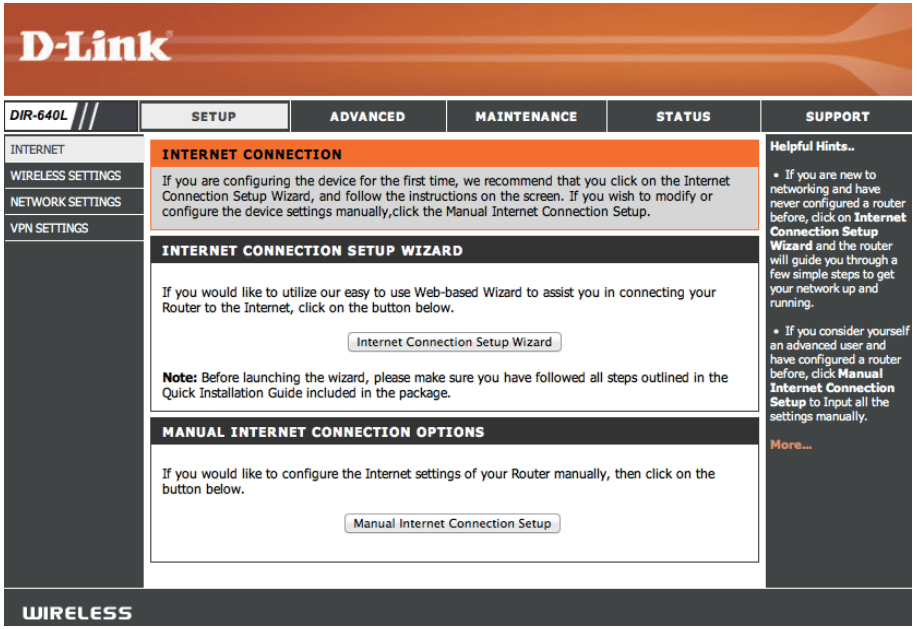


Select **Admin** from the drop-down menu and the password **should be left empty**.



Internet Connection Setup

Use this tab to choose if you want to follow the simple steps of the Connection Setup Wizard, or if you want to set up your Internet connection manually.

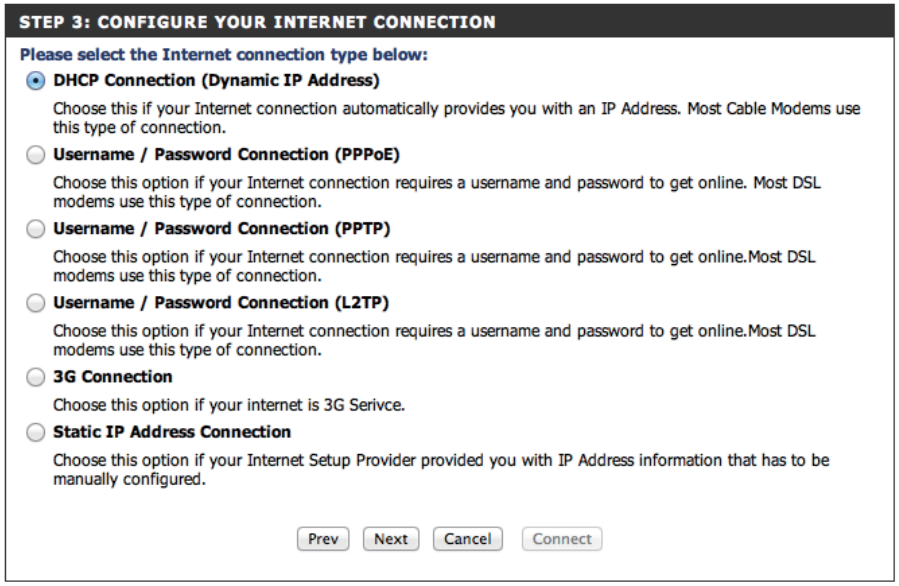


Internet Connection Wizard

Click **Next** to begin the Setup Wizard.

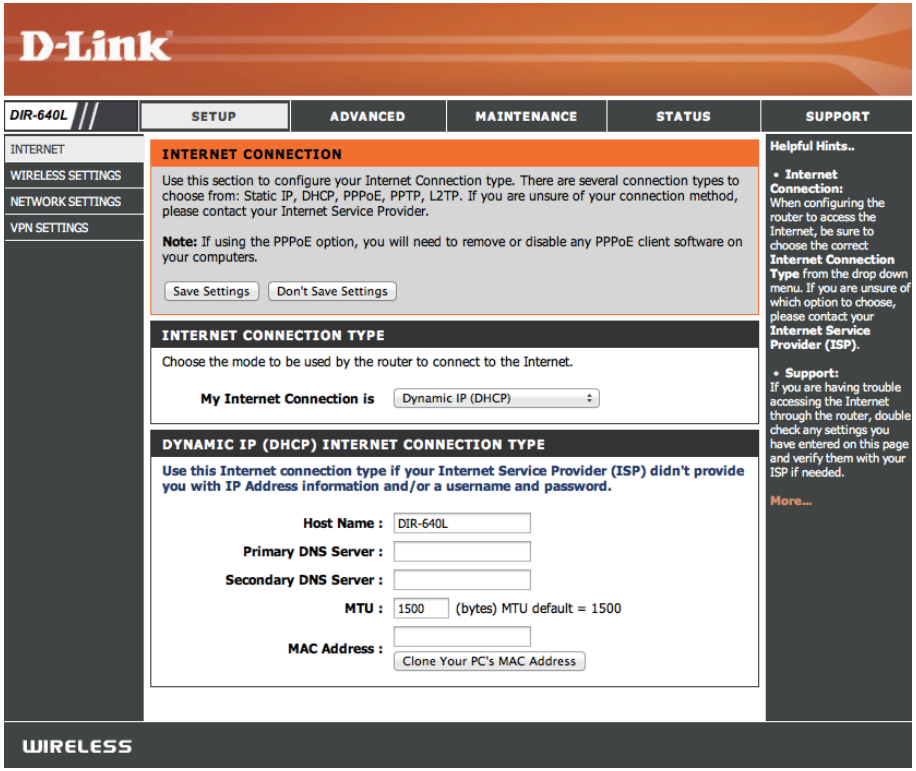
STEP 1: Choose a password for your device.

STEP 2: Choose the method you use to connect to the Internet, and follow the step-by-step instructions.



Manual Internet Connection

Use this tab to choose either Static IP, DHCP, PPPoE, PPTP, L2TP, Dial-Up, Russian PPPoE, Russian PPTP, or Russian L2TP to configure your Internet connection. You may need to get this information from your ISP (Internet Service Provider).



Static (assigned by ISP)

Select Static IP Address if all the Internet port's IP information is provided to you by your ISP. You will need to enter in the IP address, subnet mask, gateway address, and DNS address(es) provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format.

My Internet Connection Is: Select **Static IP** to manually enter the IP settings supplied by your ISP.

IP Address: Enter the IP address assigned by your ISP.

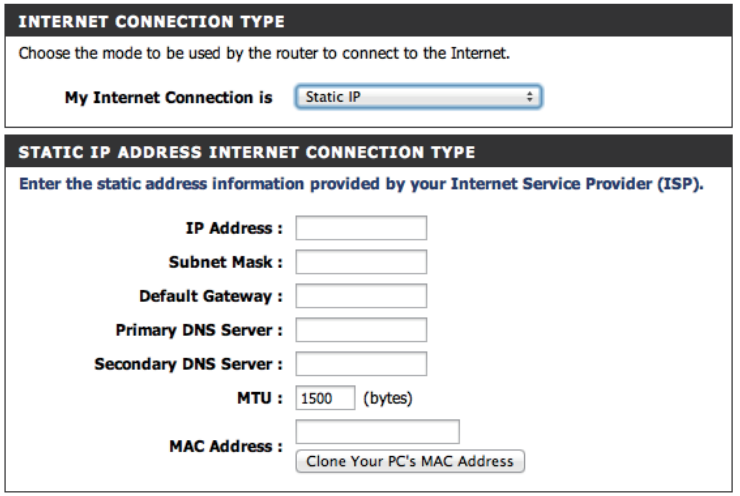
Subnet Mask: Enter the Subnet Mask assigned by your ISP.

Default Gateway: Enter the Gateway assigned by your ISP.

DNS Servers: The DNS server information will be supplied by your ISP (Internet Service Provider.)

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1500 is the default MTU.

MAC Address: The default MAC Address is set to the Internet port's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP. You can use the **Copy Your PC's MAC Address** button to replace the Internet port's MAC address with the MAC address of your Ethernet card.



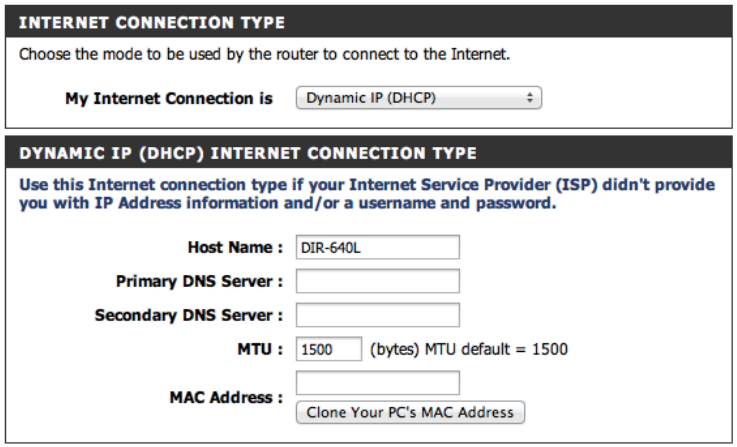
Dynamic (Cable)

My Internet Connection Is: Select **Dynamic IP (DHCP)** to obtain IP Address information automatically from your ISP. Select this option if your ISP does not give you any IP numbers to use. This option is commonly used for cable modem services.

Host Name: The Host Name is optional but may be required by some ISPs. Leave blank if you are not sure.

Primary/Secondary DNS Server: Enter the Primary and secondary DNS server IP addresses assigned by your ISP. These addresses are usually obtained automatically from your ISP. Leave at 0.0.0.0 if you did not specifically receive these from your ISP.

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1500 is the default MTU.



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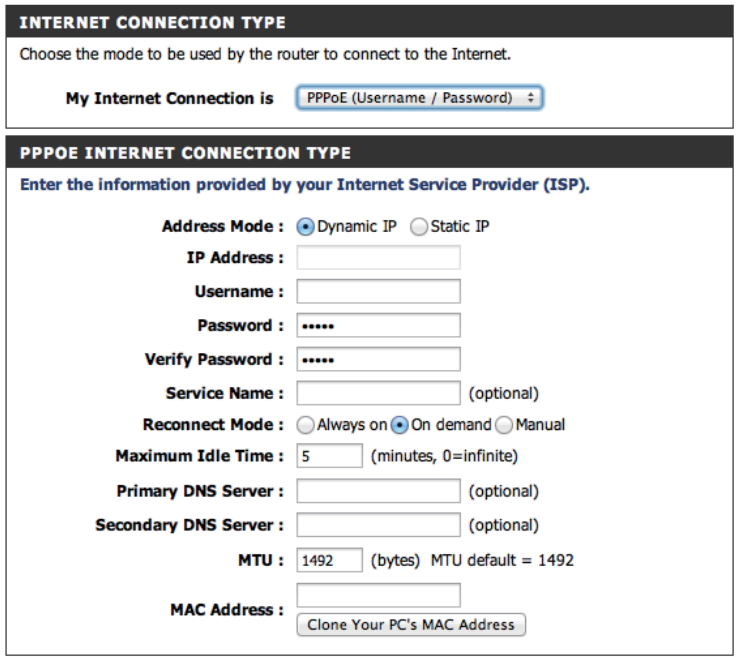
PPPoE (DSL)

Choose PPPoE (Point to Point Protocol over Ethernet) if your ISP uses a PPPoE connection. Your ISP will provide you with a username and password. This option is typically used for DSL services. Make sure to remove your PPPoE software from your computer. The software is no longer needed and will not work through a router.



My Internet Connection Is: Select **PPPoE (Username/Password)** from the drop-down menu.

Address Mode: Select **Static IP** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select **Dynamic**.

IP Address: Enter the IP address (Static PPPoE only).

User Name: Enter your PPPoE user name.

Password: Enter your PPPoE password and then retype the password in the next box.

Service Name: Enter the ISP Service Name (optional).

Reconnect Mode: Select either **Always-on**, **On-Demand**, or **Manual**.

Maximum Idle Time: Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.

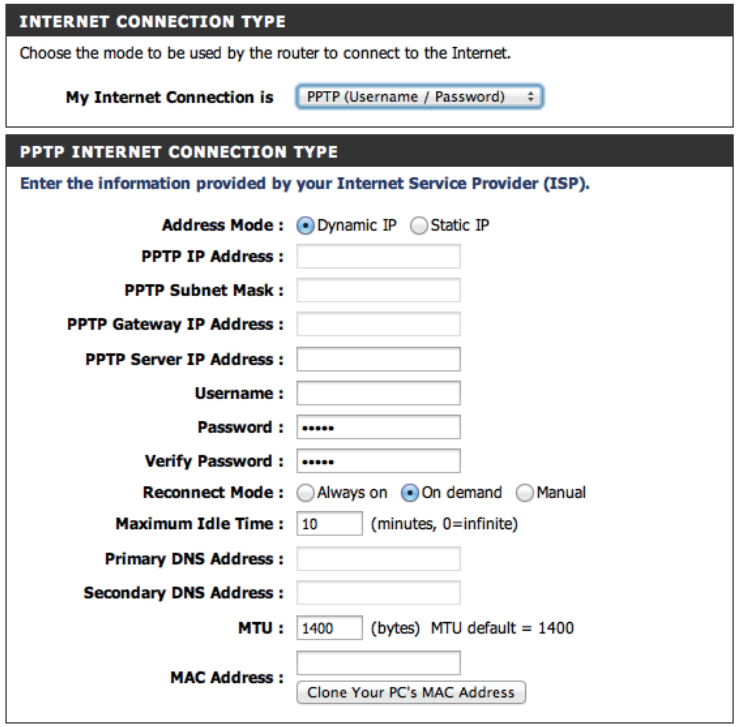
DNS Addresses: Enter the Primary and Secondary DNS Server Addresses (Static PPPoE only).

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

MAC Address: The default MAC Address is set to the Internet port's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP. You can use the **Copy Your PC's MAC Address** button to replace the Internet port's MAC address with the MAC address of your Ethernet card.

PPTP

Choose PPTP if your ISP uses a PPTP connection. Your ISP will provide you with a username and password.



My Internet Connection Is: Select **PPTP** from the drop-down menu.

Address Mode: Select **Static IP** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select **Dynamic**.

PPTP IP Address: Enter the IP address for your PPTP connection.

PPTP Subnet Mask: Enter your PPTP subnet mask.

PPTP Gateway IP Address: Enter the Gateway IP address for your PPTP connection.

PPTP Server IP Address: Enter the Server IP address for your PPTP connection.

User Name: Enter your PPTP user name.

Password: Enter your PPTP password and then retype the password in the next box.

Reconnect Mode: Select either **Always-on**, **On-Demand**, or **Manual**.

Maximum Idle Time: Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.

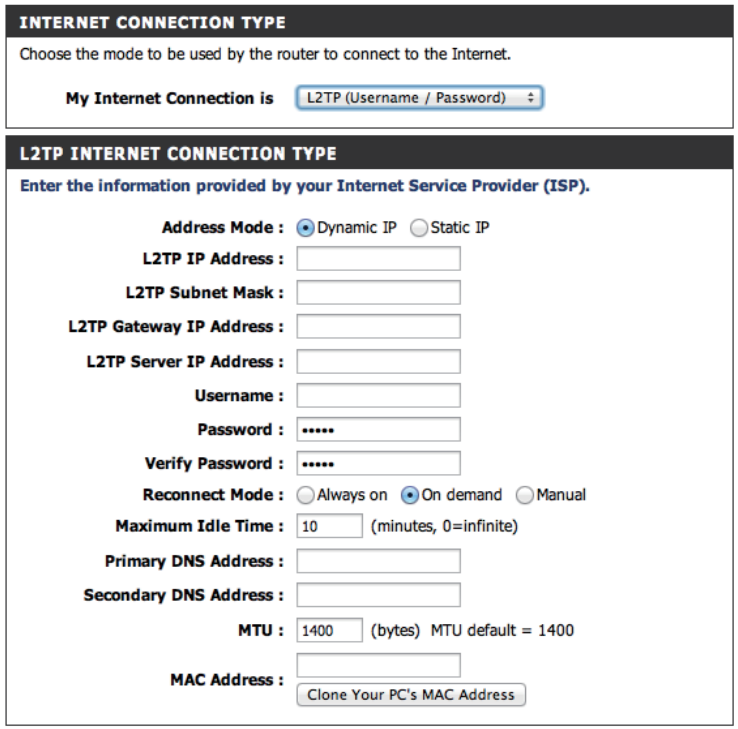
DNS Addresses: Enter the Primary and Secondary DNS Server Addresses (Static PPTP only).

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

MAC Address: The default MAC Address is set to the Internet port's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

L2TP

Choose L2TP if your ISP uses a L2TP connection. Your ISP will provide you with a username and password.



My Internet Connection Is: Select **L2TP** from the drop-down menu.

Address Mode: Select **Static IP** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select **Dynamic**.

PPTP IP Address: Enter the IP address for your L2TP connection.

PPTP Subnet Mask: Enter your L2TP subnet mask.

PPTP Gateway IP Address: Enter the Gateway IP address for your L2TP connection.

PPTP Server IP Address: Enter the Server IP address for your L2TP connection.

User Name: Enter your L2TP user name.

Password: Enter your L2TP password and then retype the password in the next box.

Reconnect Mode: Select either **Always-on**, **On-Demand**, or **Manual**.

Maximum Idle Time: Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.

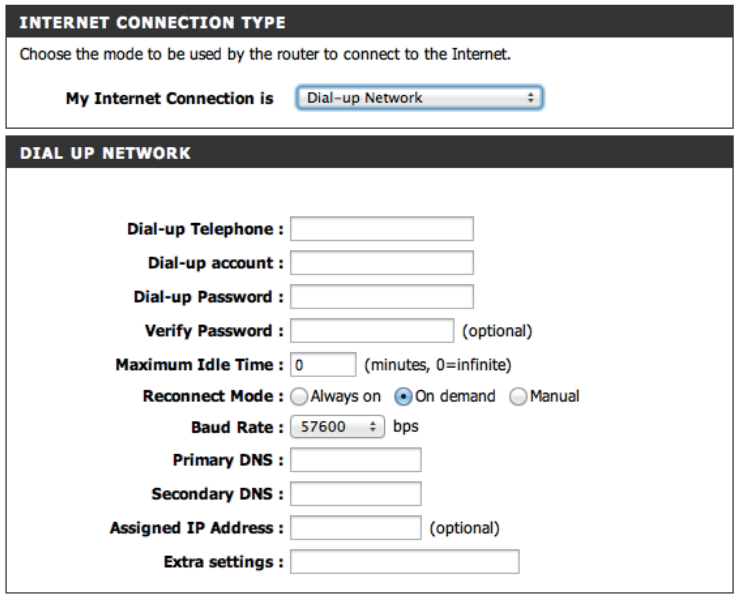
DNS Addresses: Enter the Primary and Secondary DNS Server Addresses (Static L2TP only).

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

MAC Address: The default MAC Address is set to the Internet port's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

Dial-Up

Choose Dial-Up if you use a dial-up connection with your ISP to connect to the Internet.



My Internet Connection Is: Select **Dial-up Network** from the drop-down menu.

Dial-up Telephone: Enter the telephone number you use to reach your dial-up provider.

Dial-up Account: Enter the account name for your dial-up service.

Dial-up Password: Enter your password and then retype the password in the next box.

Maximum Idle Time: Choose the amount of minutes of inactivity before the connection is dropped. Choose '0" if you want to never drop the connection.

Reconnect Mode: Select either **Always-on**, **On-Demand**, or **Manual**.

Baud Rate: Choose the speed of your modem connection from the drop-down menu.

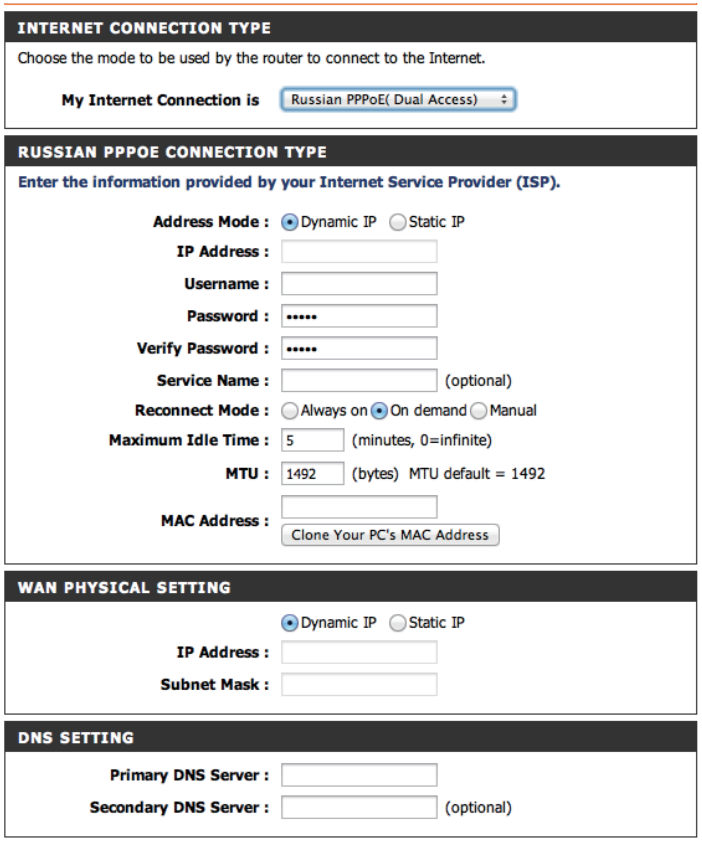
DNS Addresses:
Enter the Primary and Secondary DNS Server Addresses.

Assigned IP Address:
If your ISP gave you a static IP address for your connections, enter it here.

Extra Settings:
Add any additional settings provided by your ISP here.

Russian PPPoE

Choose Russian PPPoE (Dual Access) if your ISP uses a PPPoE connection in Russia with WAN physical access.



My Internet Connection Is: Select **Russian PPPoE (Dual Access)** from the drop-down menu.

Address Mode: Select **Static IP** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select **Dynamic**.

IP Address: Enter the IP address (Static PPPoE only).

User Name: Enter your PPPoE user name.

Password: Enter your PPPoE password and then retype the password in the next box.

Service Name: Enter the ISP Service Name (optional).

Reconnect Mode: Select either **Always-on**, **On-Demand**, or **Manual**.

Maximum Idle Time: Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

MAC Address: The default MAC Address is set to the Internet port's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

WAN Physical Setting: Select a **Dynamic IP** or **Static IP** if your WAN physical setting.

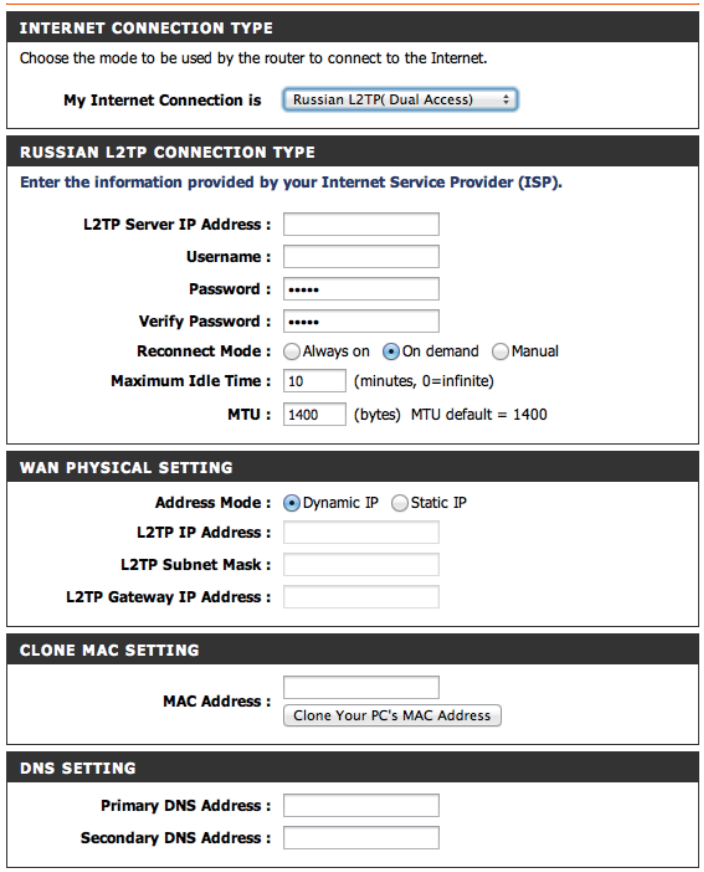
IP Address Enter the IP address for your PPTP connection.

Subnet Mask: Enter your PPTP subnet mask.

DNS Addresses: Enter the Primary and Secondary DNS Server Addresses (Static PPPoE only).

Russian L2TP

Choose Russian L2TP (Dual Access) if your ISP uses an L2TP connection in Russia with WAN physical access.



My Internet Connection: Select **Russian L2TP (Dual Access)** from the drop-down menu.

LT2P Server IP Address: Enter the IP address provided by your ISP.

User Name: Enter your L2TP user name.

Password: Enter your L2TP password and then retype the password in the next box.

Reconnect Mode: Select either **Always-on**, **On-Demand**, or **Manual**.

Maximum Idle Time: Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.

MTU: Enter the desired Maximum Transmission Unit.

Address Mode: Select **Static IP** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select **Dynamic**.

L2TP IP Address: Enter the L2TP IP address.

L2TP Subnet Mask: Enter your L2TP subnet mask.

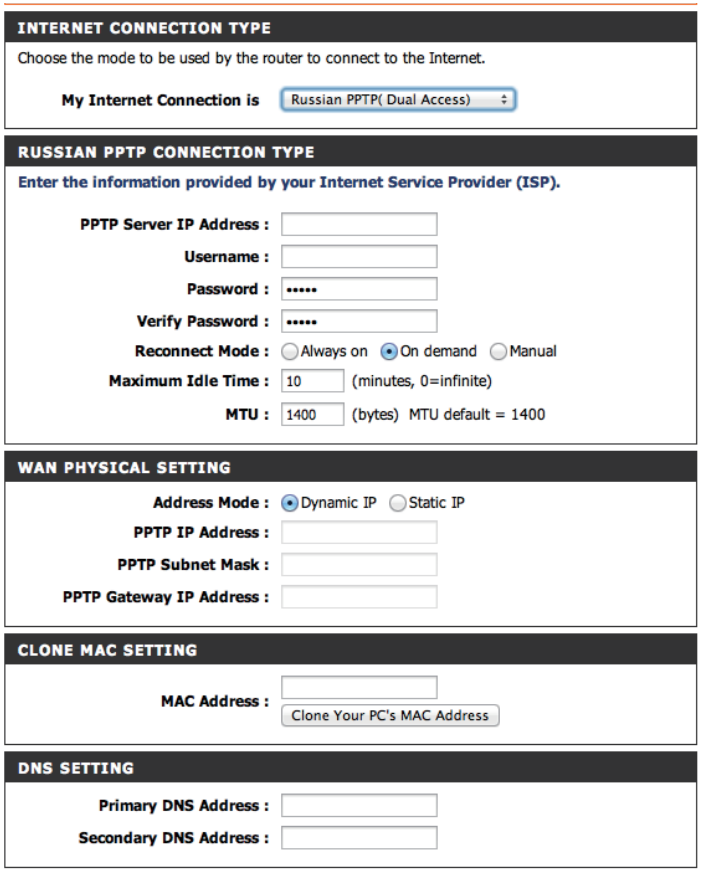
L2TP Gateway IP Address: Enter the L2TP Gateway IP address.

MAC Address: The default MAC Address is set to the Internet port's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

DNS Addresses: Enter the Primary and Secondary DNS Server Addresses.

Russian PPTP

Choose Russian PPTP (Dual Access) if your ISP uses an PPTP connection in Russia with WAN physical access.



My Internet Connection: Select **Russian PPTP (Dual Access)** from the drop-down menu.

PPTP Server IP Address: Enter the IP address provided by your ISP.

User Name: Enter your PPTP user name.

Password: Enter your PPTP password and then retype the password in the next box.

Reconnect Mode: Select either **Always-on**, **On-Demand**, or **Manual**.

Maximum Idle Time: Enter a maximum idle time during which the Internet connection is maintained during inactivity. To disable this feature, enable Auto-reconnect.

MTU: Enter the desired Maximum Transmission Unit.

Address Mode: Select **Static IP** if your ISP assigned you the IP address, subnet mask, gateway, and DNS server addresses. In most cases, select **Dynamic**.

PPTP IP Address: Enter the PPTP IP address.

PPTP Subnet Mask: Enter your PPTP subnet mask.

PPTP Gateway IP Address: Enter the PPTP Gateway IP address.

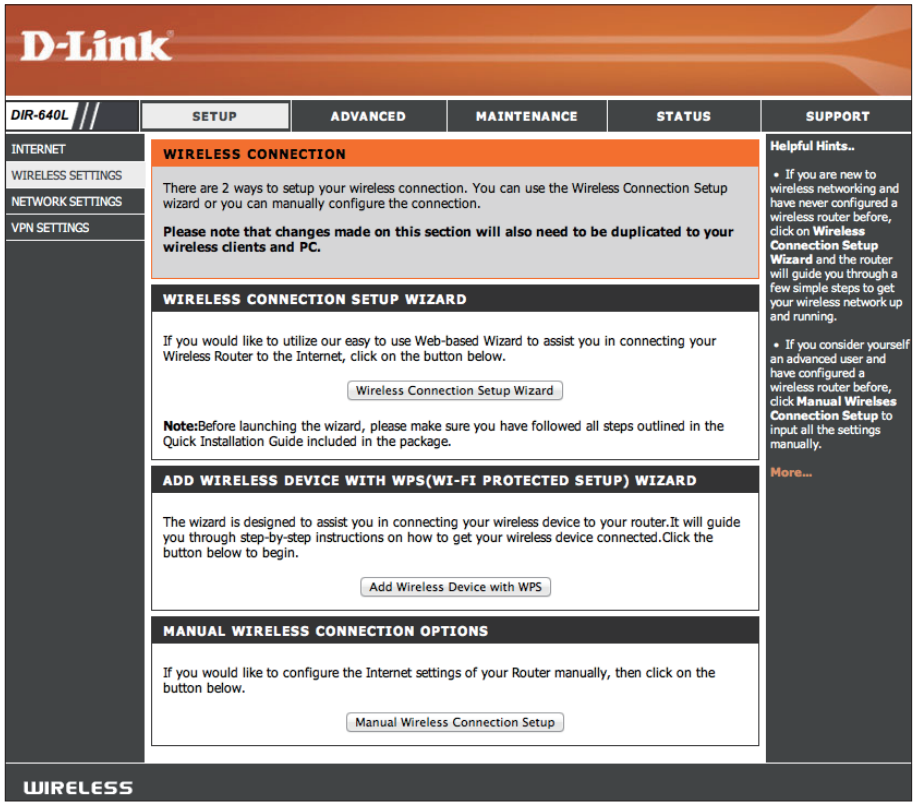
MAC Address: The default MAC Address is set to the Internet port's physical interface MAC address on the Broadband Router. It is not recommended that you change the default MAC address unless required by your ISP.

DNS Addresses: Enter the Primary and Secondary DNS Server Addresses.

Wireless Settings

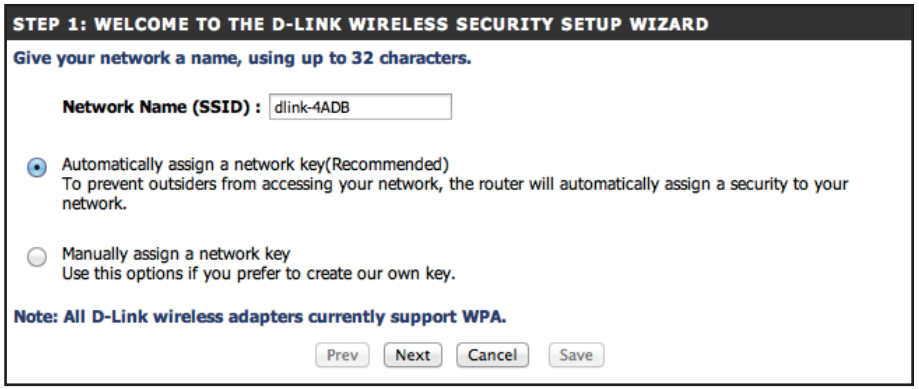
On this page you can set up advanced options for your the wireless settings of your DIR-640L.

Use this page you can choose if you want to follow the simple steps of the Wireless Setup Wizard, add a device using WPS, or if you want to set up your wireless connection options manually.

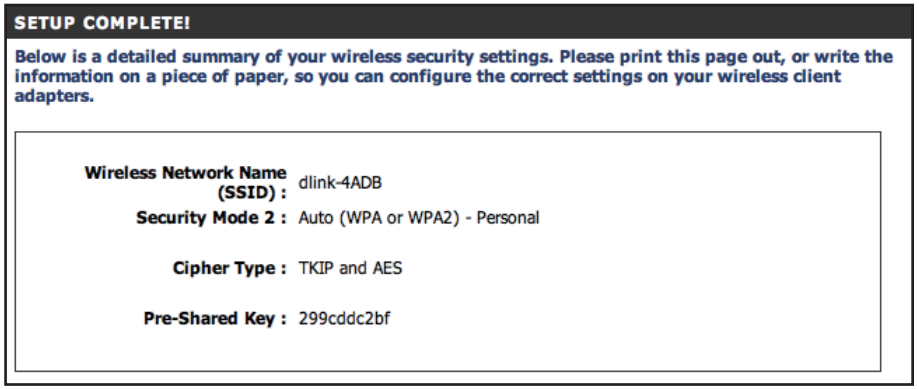


Wireless Setup Wizard

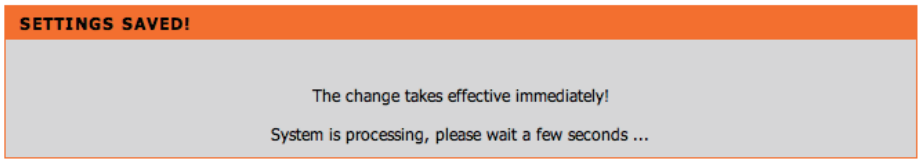
STEP 1: If you choose **Automatically assign a network key** click next to immediately complete the process.



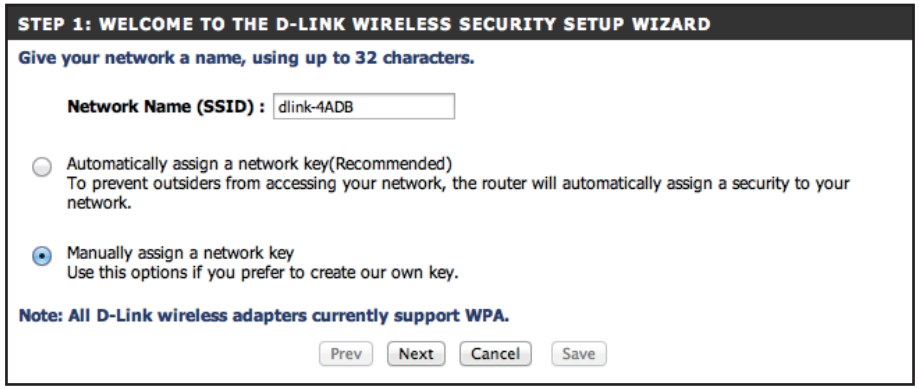
STEP 2: Setup is completed, you should take note of your settings, especially your network name and pre-shared key.



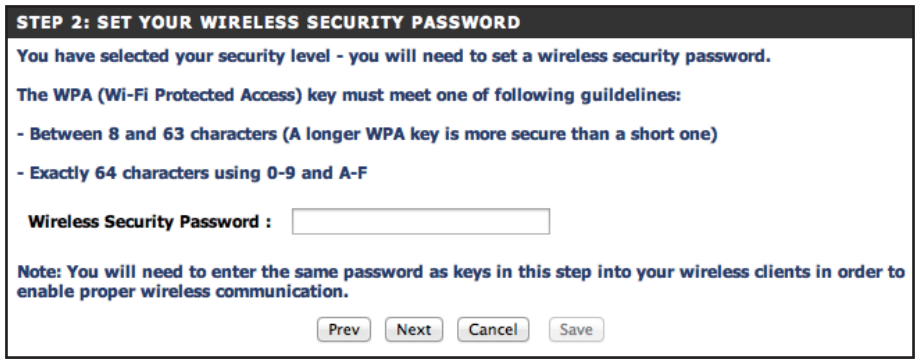
STEP 3: The router must now reboot.



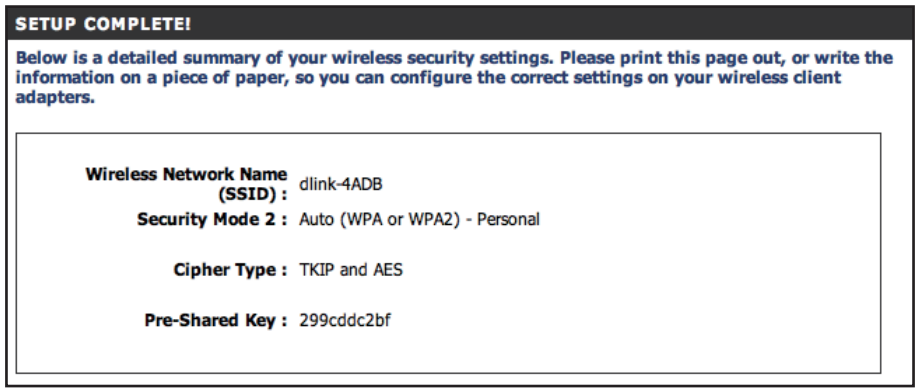
STEP 1: If you choose **Manually assign a network key** click next to go to the next step.



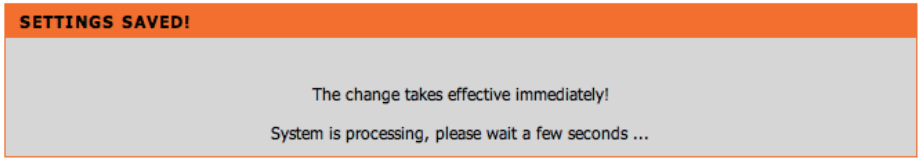
STEP 2: Choose your wireless password. You will need this when connecting to the router from now on.



STEP 3: Setup is completed, you should take note of your settings, especially your network name and pre-shared key.

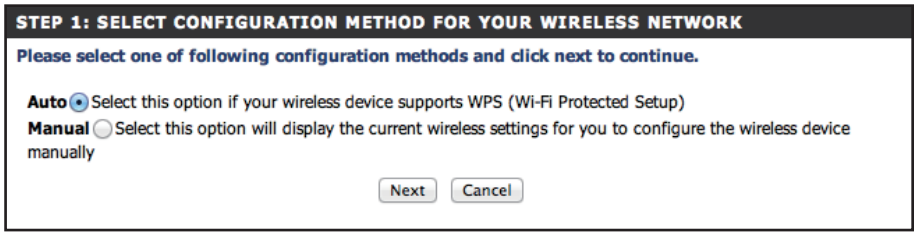


STEP 4: The router must now reboot.



WPS Connection Wizard

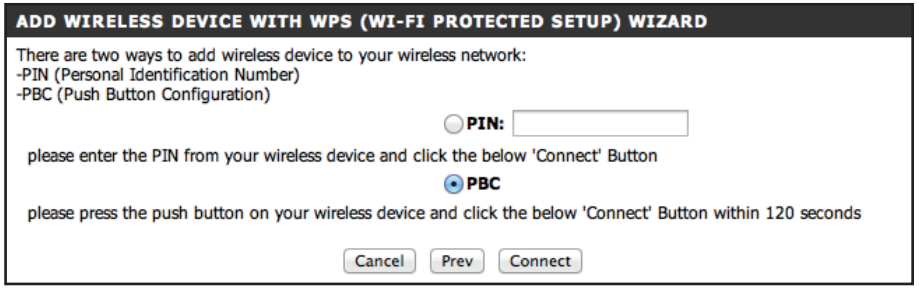
STEP 1: Choose **Auto** to connect a device that already has support for WPS connections.



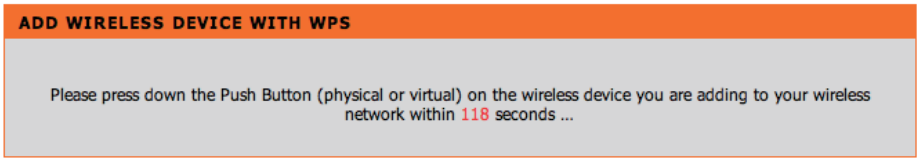
STEP 2: Choose whether you want to connect via **PIN** or **PBC**.

If you want to use the PIN method, simply enter your PIN and click **Connect**.

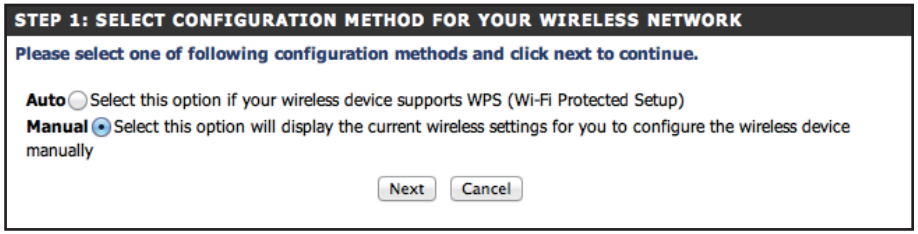
If you want to use the **PBC** method click **Connect** and go to the next step.



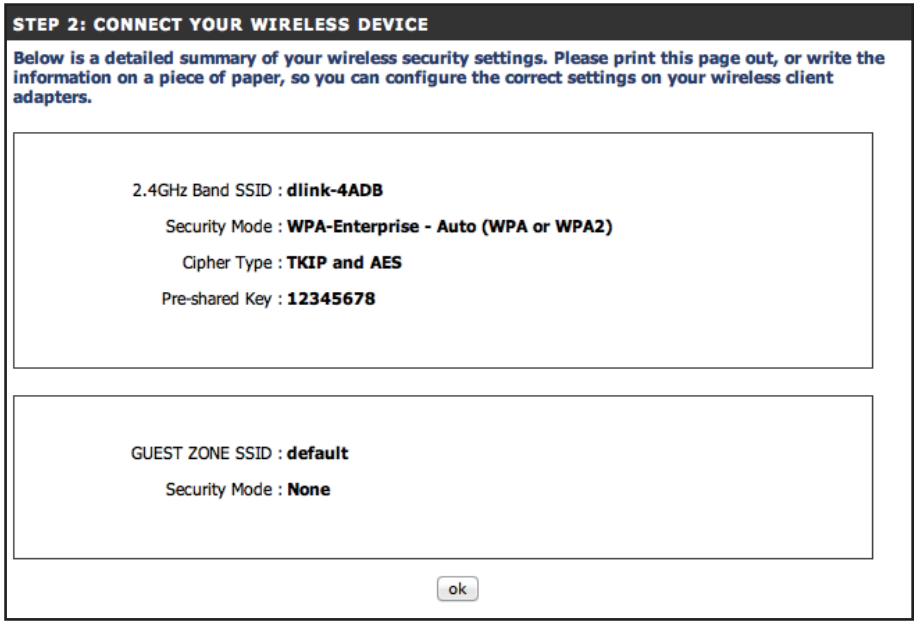
STEP 3: Press the button on your device and wait for the connection to be established.



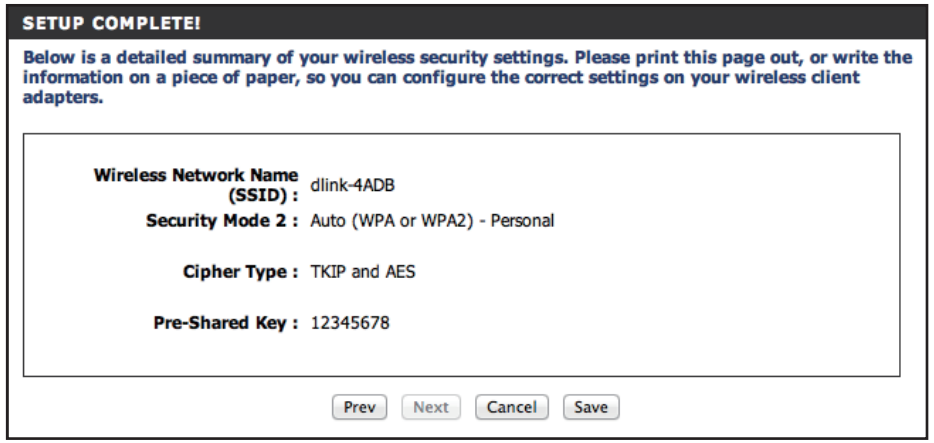
STEP 1: Choose **Manual** to configure a device manually.



STEP 2: Use the information in this window to configure your device. When your device is prepared, click ok.



STEP 3: Your device is now ready. Save your settings..



Manual Wireless Settings

The Wireless Settings feature will allow you to create temporary zones that can be used by guests to access the Internet.

Enable Wireless: Check to enable the wireless function. If you do not want to use wireless, uncheck the box to disable all the wireless functions.

IP Address: Input the IP Address of the router. (The default is 192.169.0.1)

802.11 Mode: Select the wireless mode from the drop-down menu.

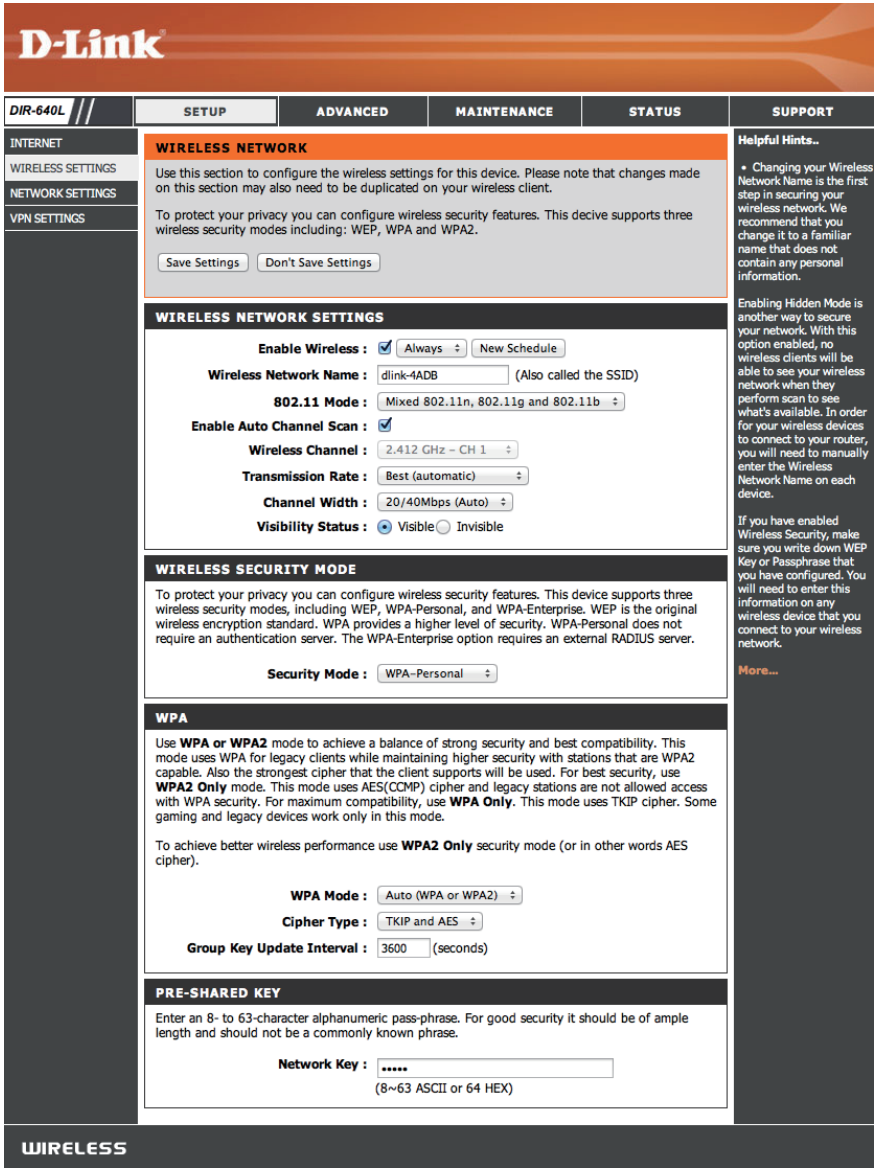
Enable Auto Channel Scan: This setting can be selected to allow the DIR-640L to choose the channel with the least amount of interference.

Wireless Channel: Indicates the channel setting for the DIR-640L. If you enable Auto Channel Scan, this option will be greyed out.

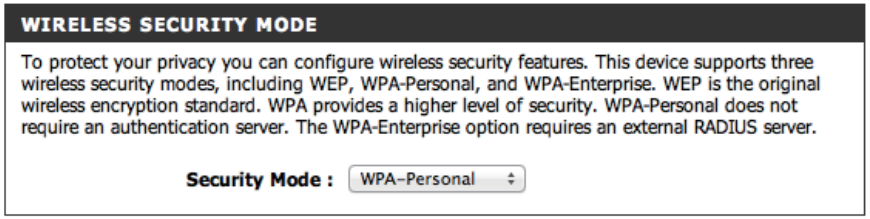
Transmission Rate: Select the transmission rate or let the router automatically choose for you.

Channel Width: Select the Channel Width:
Auto 20/40 - This is the default setting. Select if you are using both 802.11n and non-802.11n wireless devices.
20MHz - Select if you are not using any 802.11n wireless clients.
40MHz - Select if using only 802.11n wireless clients.

Visibility Status: Select Invisible if you do not want the SSID of your wireless network to be broadcasted by the DIR-640L. If Invisible is selected, the SSID will not be seen by Site Survey utilities so your wireless clients will have to know the SSID of the DIR-640L.



Security Mode: Select the type of security or encryption you would like to enable for the guest zone. You can choose from **WPA**, **WEP**, or **WPA Enterprise** from the drop-down menu.

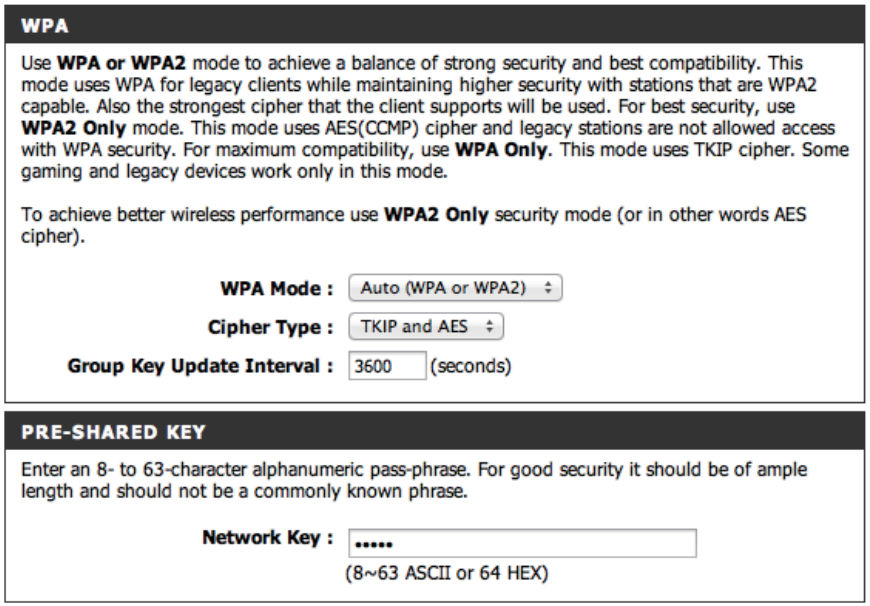


WPA Mode (WPA): If you selected WPA security, choose the type of WPA security to use from the drop-down menu: **WPA**, **WPA2**, or **Auto (WPA or WPA2)**.

Cipher Type: Choose the cipher type from the drop-down menu.

Group Key Update Interval: Set the length of time before the group key is updated.

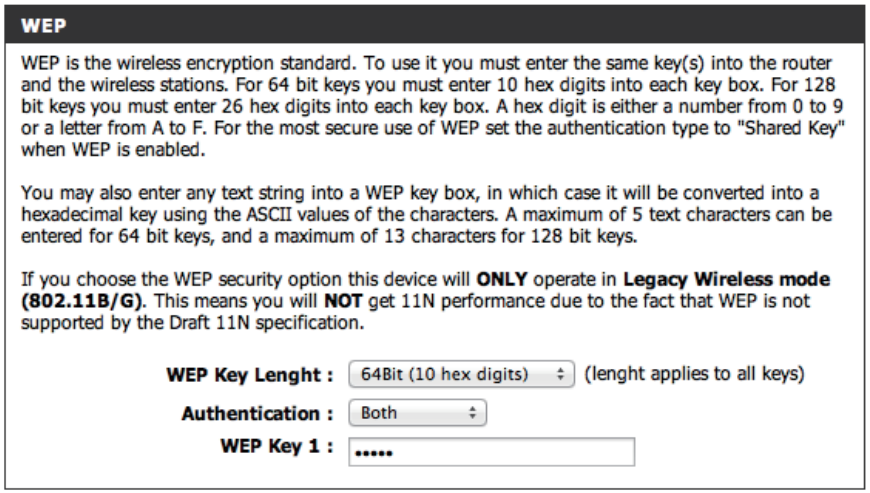
Network Key: Enter the network pass key phrase to use.



WEP Key Length (WEP): If you selected WEP security, select the length you would like to set for your key.

Authentification: Choose your authentification method from the drop-down menu.

WEP Key 1: Enter your pass key.



WPA Mode (WPA Enterprise): If you selected WPA Enterprise security, choose the WPA mode you would like to use from the drop-down menu: **WPA**, **WPA2**, or **Auto (WPA or WPA2)**.

Cipher Type: Choose the cipher type from the drop-down menu.

Group Key Update Interval: Set the length of time before the group key is updated.

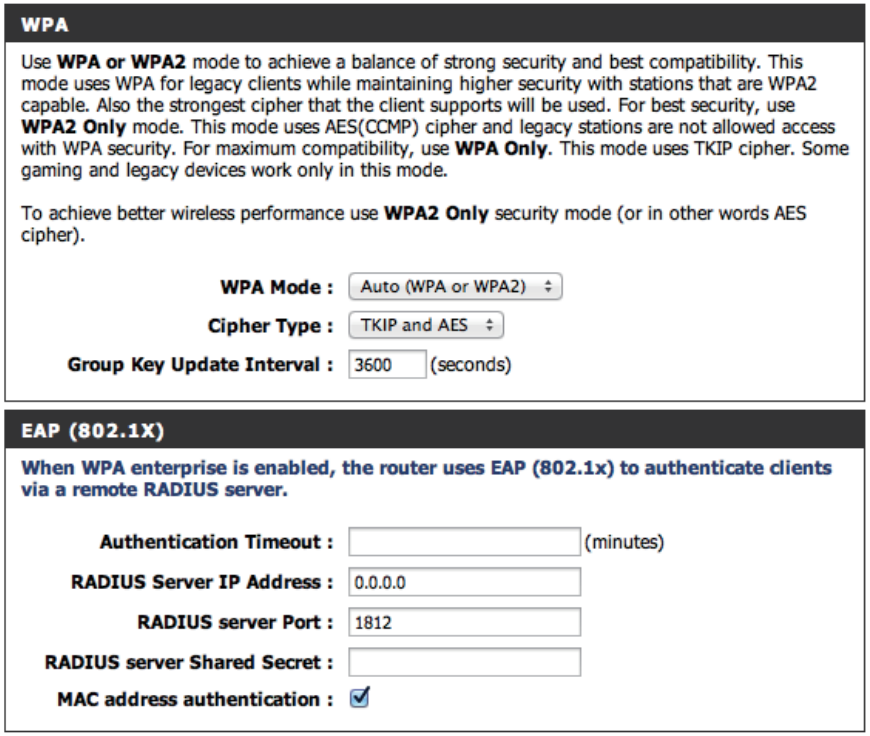
Authentification Timeout: Enter the amount of time in minutes before EAP authentification is abandoned.

RADIUS Server IP Address: Enter the IP address of the RADIUS server to connect to for authentification.

RADIUS Server Port: Enter the port used for contacting the RADIUS server.

RADIUS Server Shared Secret: Enter the shared secret of the RADIUS server.

MAC Address Authentification: Click to allow the RADIUS server to verify the devices MAC address for connection.



Network Settings

This section will allow you to change the local network settings of the router and to configure the DHCP settings.

Router IP Address: Enter the IP address of the router. The default IP address is 192.168.0.1.

Subnet Mask: Enter the Subnet Mask. The default subnet mask is 255.255.255.0.

Device Name: Choose a name for the router.

Enable DHCP Server: Check this box to enable the DHCP server on your router. Uncheck to disable this function.

DHCP IP Address Range: Enter the starting and ending IP addresses for the DHCP server's IP assignment.

DHCP Lease Time: The length of time for the IP address lease. Enter the Lease time in minutes.

Primary WINS IP Address: Enter your primary WINS Server IP address.

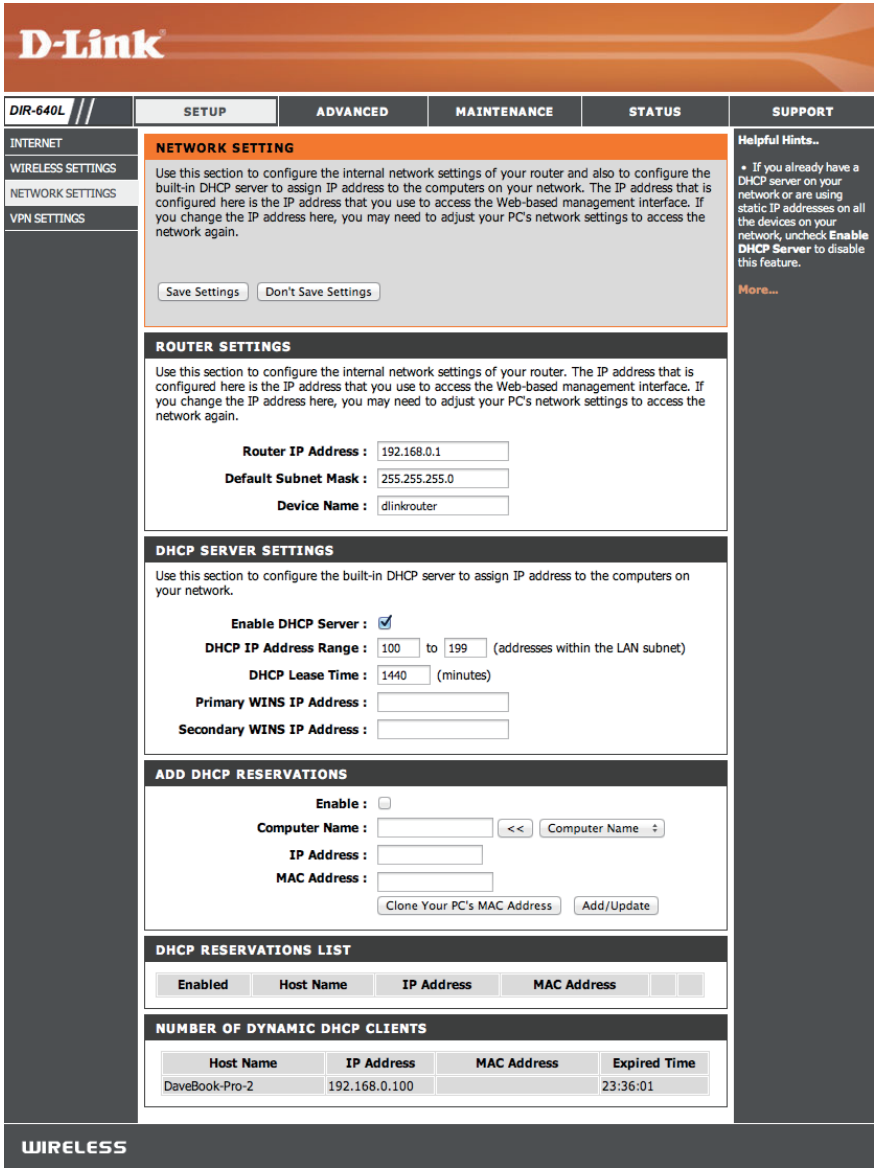
Secondary WINS IP Address: Enter your secondary WINS Server IP address.

Enable DHCP Reservations: Check this box to add a DHCP reservations list.

Computer Name: Give an identity to the computer.

IP Address: Enter the computer's IP address.

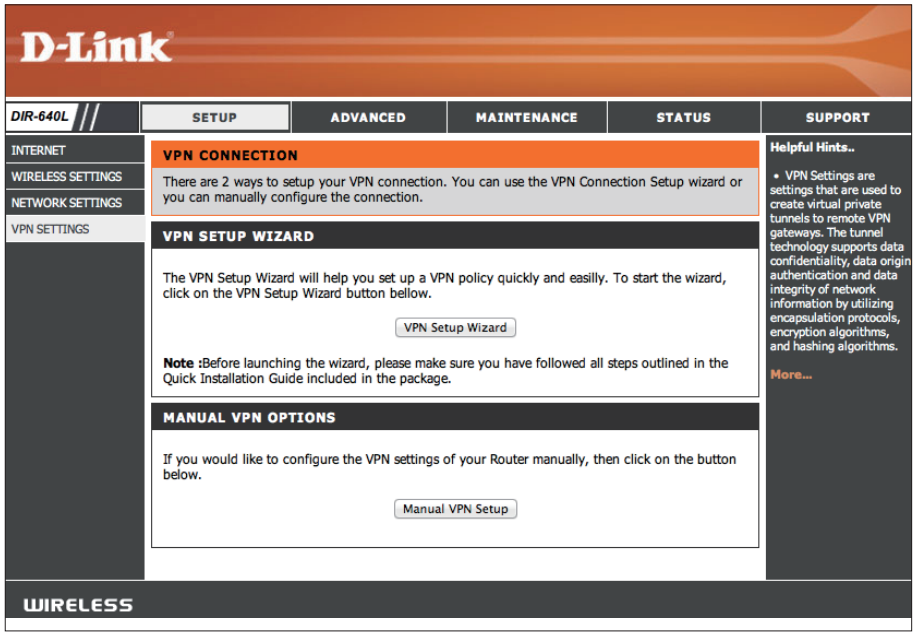
MAC Address: Enter the MAC address or Clone your PC's address.



VPN Settings

On this page you can set up advanced options for a Virtual Private Network (VPN). The DIR-640L supports both IPSec and L2TP as the Server Endpoint. IPSec (Internet Protocol Security) is a set of protocols that can provide IP security at the network layer.

Use this page you can choose if you want to follow the simple steps of the VPN Setup Wizard, or if you want to set up VPN options manually.

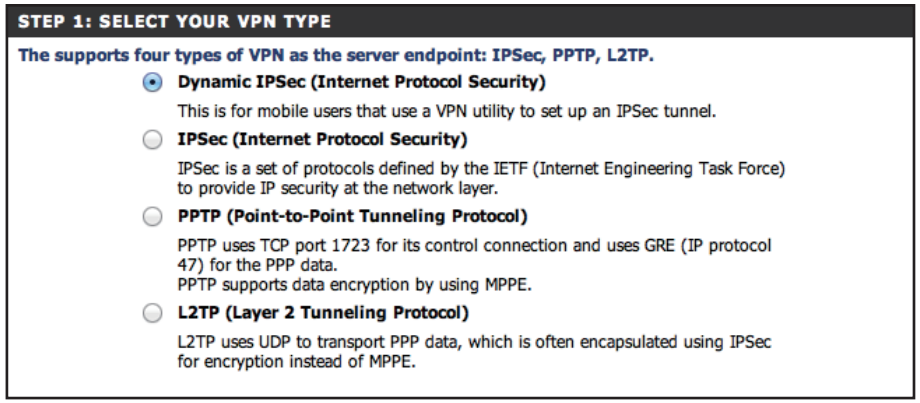


VPN Setup Wizard

This tells you was to expect when you go through the wizard. To get to Step 1 (Selecting Your VPN Type), click **Next**.

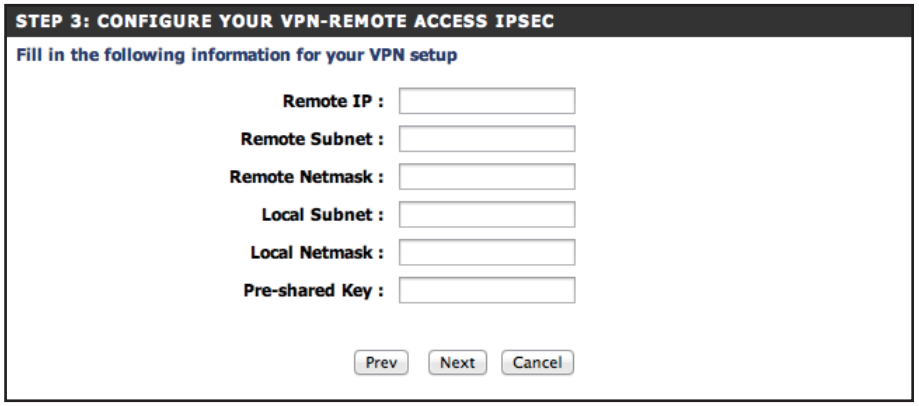
Dynamic IPSec VPN

STEP 1: Choose **Dynamic IPSec** (Internet Protocol Security) then click **Next**.



STEP 2: Give your VPN profile a name, and click **Next**.

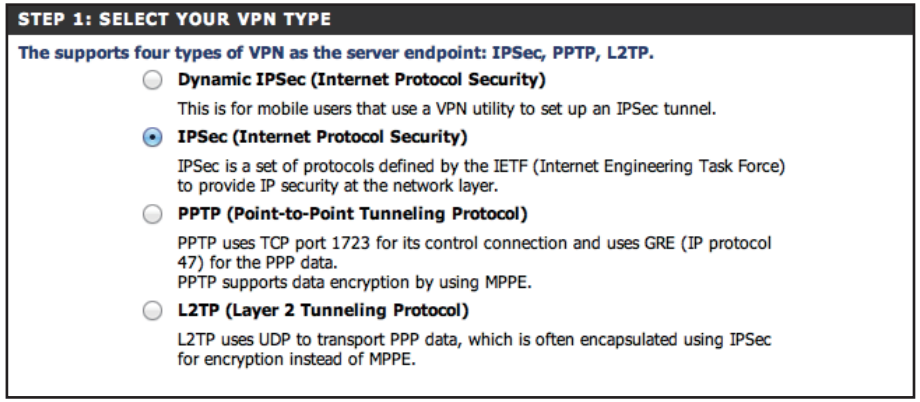
STEP 3: Enter the Local Subnet/Mask and the pre-shared key for your VPN, and click **Next**.



STEP 4: Click **Next** to restart the router. You have now completed the VPN Wizard Setup.

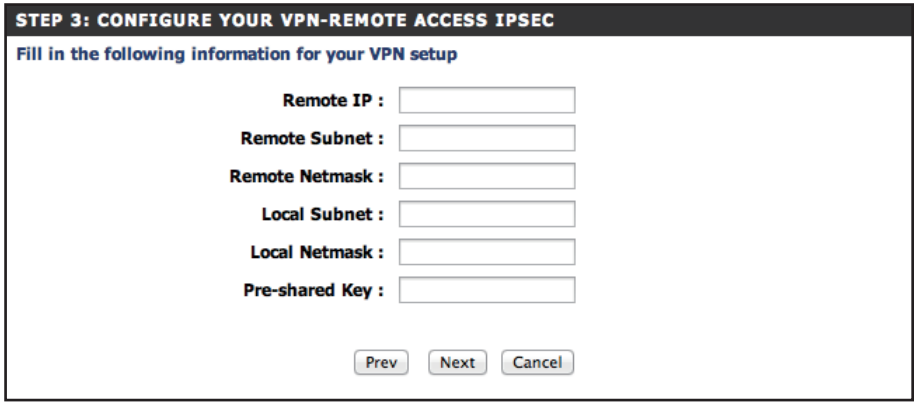
IPSec VPN

STEP 1: Choose **Dynamic IPSec** (Internet Protocol Security) then click **Next**.



STEP 2: Give your VPN profile a name, and click **Next**.

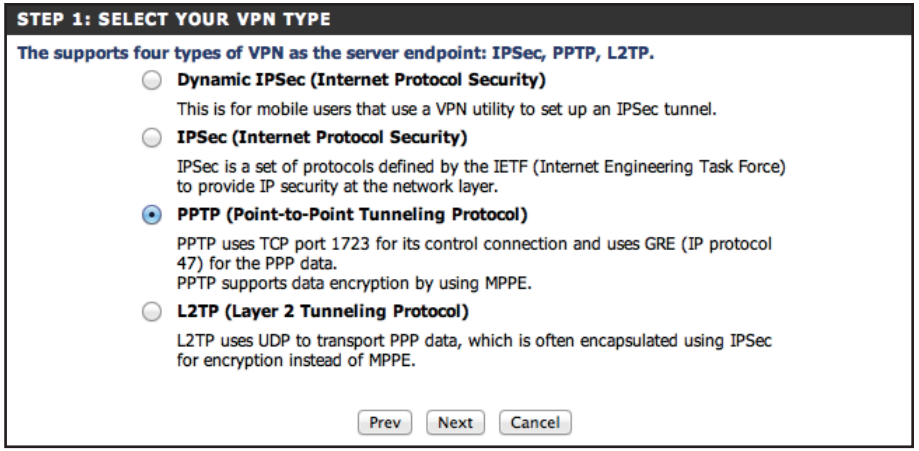
STEP 3: Enter the Local Subnet/Mask and the pre-shared key for your VPN, and click **Next**.



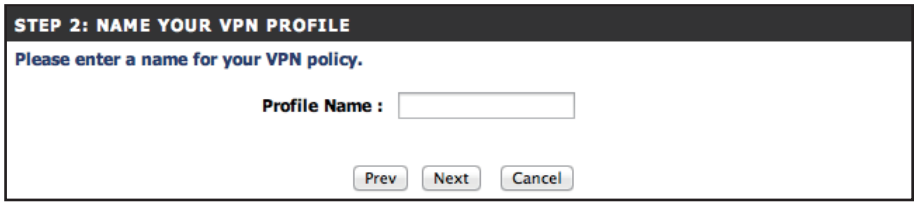
STEP 4: Click **Next** to restart the router. You have now completed the VPN Wizard Setup.

PPTP VPN

STEP 1: Choose **PPTP** (Point-to-Point Tunneling Protocol) then click on **Next**.

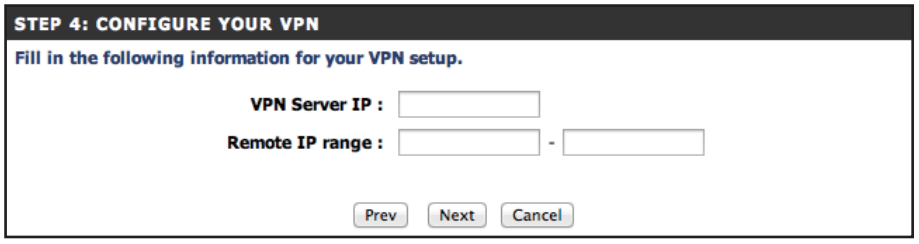


STEP 2: Give your VPN profile a name, and click **Next**.



STEP 3: Choose and username and password for your VPN, and click **Next**.

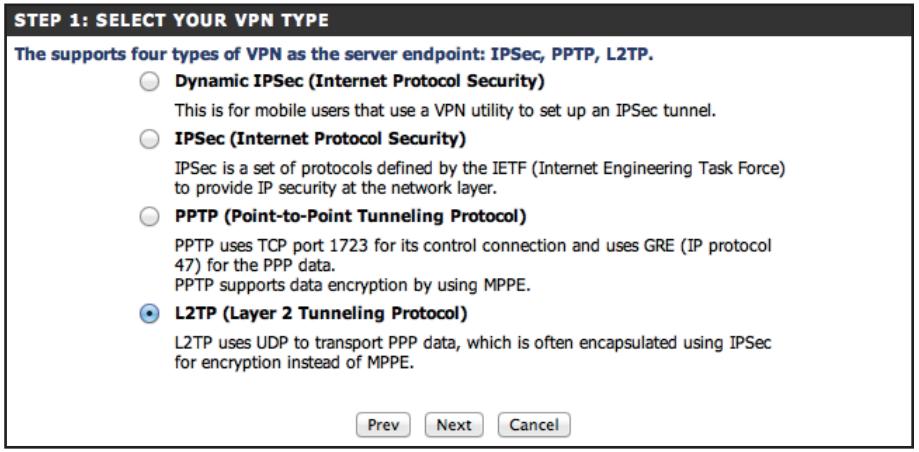
STEP 4: Enter a VPN server IP and remote IP range, and click **Next**.



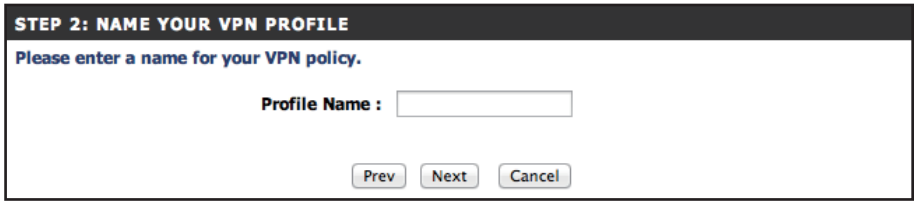
STEP 4: Click **Next** to restart the router. You have now completed the VPN Wizard Setup.

L2TP VPN

STEP 1: Choose **L2TP** (Layer 2 Tunneling Protocol) then click on **Next**.

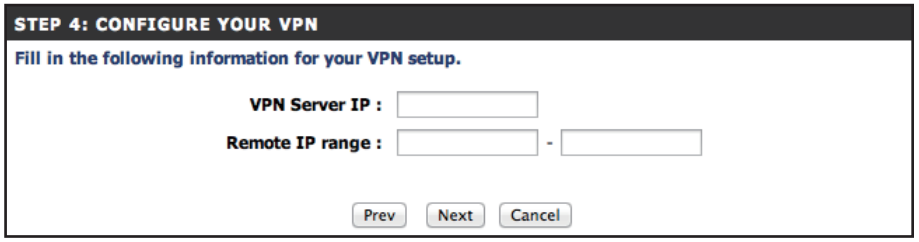


STEP 2: Give your VPN profile a name, and click **Next**.



STEP 3: Choose and username and password for your VPN, and click **Next**.

STEP 4: Enter a VPN server IP and remote IP range, and click **Next**.



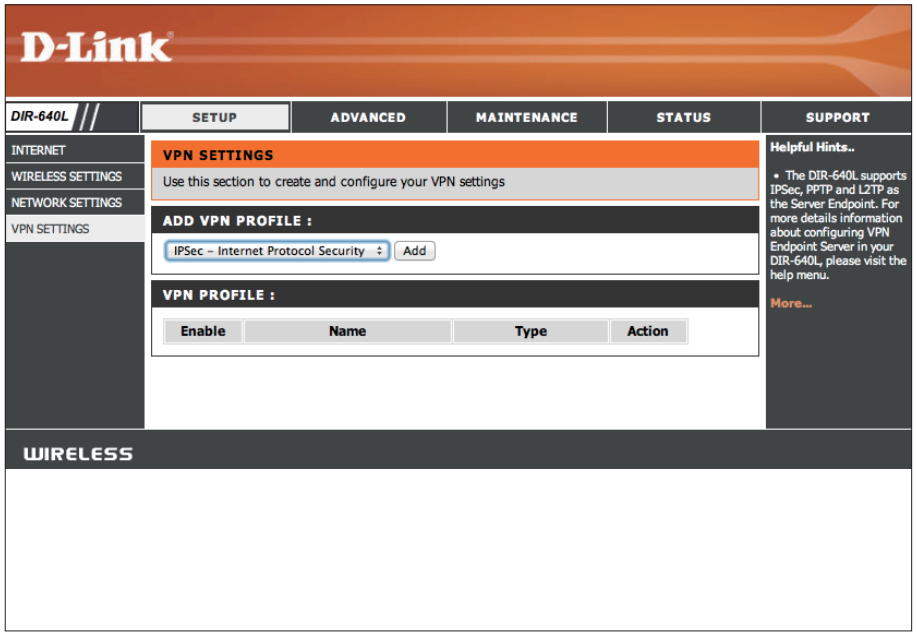
STEP 4: Click **Next** to restart the router. You have now completed the VPN Wizard Setup.

VPN Manual Settings

On this page you can set up advanced options for a Virtual Private Network (VPN). The DIR-640L supports both IPSec and L2TP as the Server Endpoint. IPSec (Internet Protocol Security) is a set of protocols that can provide IP security at the network layer.

Add VPN Profile: Choose either **IPSec** or **PPTP/L2TP** and **GRE Tunnel** from the drop-down menu and click **Add** to begin configuring a VPN profile.

VPN Profile: This list allows you to **Enable** established VPN profiles as well as **Edit** and **Delete** them.



IPSec Settings

The DIR-640L supports IPSec as the Server Endpoint. IPSec (Internet Protocol Security) protocols can provide IP security at the network layer.

IPSec: Check this box to enable IPSec.

Name: Enter a name for your VPN tunnel.

Local Subnet/ Netmask: Enter the local (LAN) subnet and mask. (ex. 192.168.0.0/24)

Remote IP: Select if you will be connecting as a remote user or on a site to site basis.

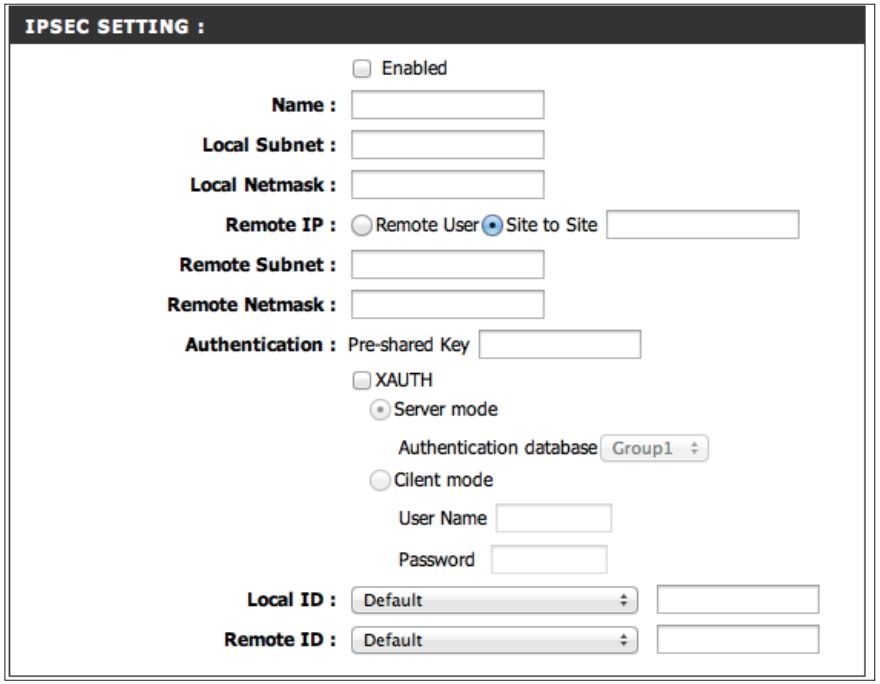
Remote Subnet/ Netmask: Enter the remote subnet and mask.

Authentification Pre-Shared Key: Enter the key for authentification.

Authentification XAUTH: If you choose to enable **XAUTH** you need to choose between Server mode with an Authetification database, or Client mode with a user name and password.

Local ID: Enter the local identification for how you appear on the network VPN when connected locally.

Remote ID: Enter the local identification for how you appear on the network VPN when connected remotely.



Phase1 Mode: Choose if you want to use a main or aggressive mode.

NAT-T Enable: **Enable** or **Disable** the NAT-T option.

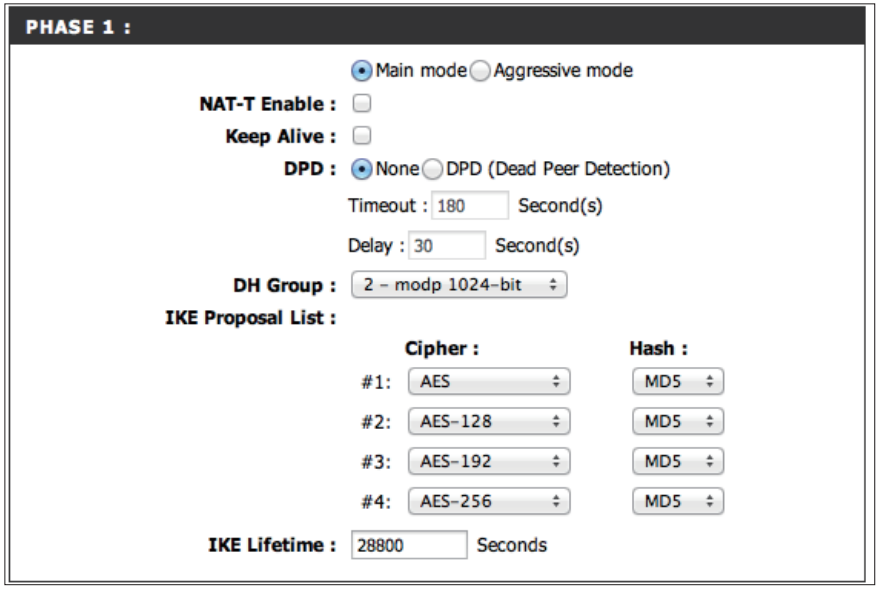
Keep Alive: **Enable** or **Disable** Keep Alive protocols.

DPD: Choose whether or not to detect dead peers, then set the amount of time in seconds before disconnect of dead peers. You can also set a delay time in second before release.

DH Group: **Enable** or **Disable** the DH Group option using the drop-down menu.

IKE Proposal Settings: Use this area to **Enable** IKE Proposals. Then determine encryption and authentification types from the drop-down menus.

IKE Lifetime: Enter the amount of time in seconds that the Phase 1 keys should last.

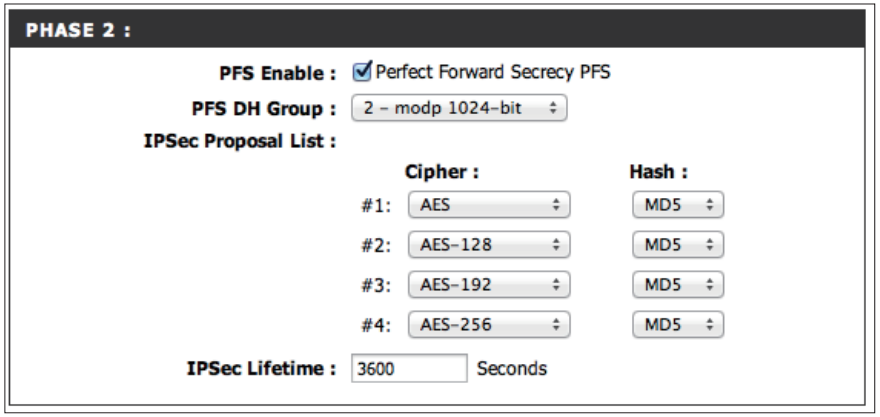


PFS Enable: Choose if you want to use Perfect Forward Secrecy. PFS is an additional security protocol.

PFS DH Group: Choose a PFS DH Group from the drop-down menu.

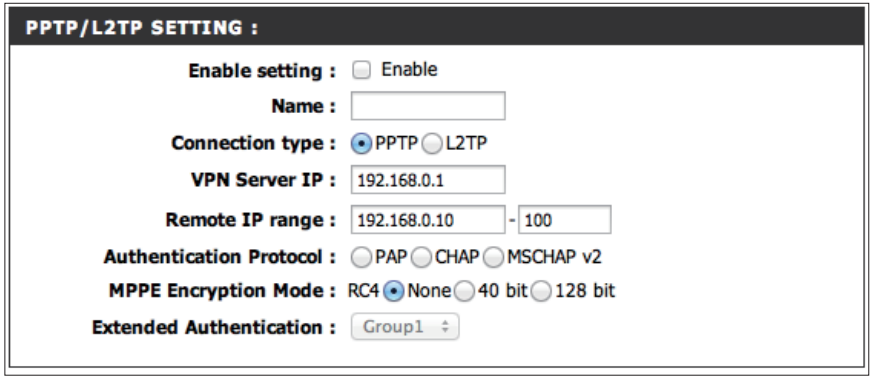
IPSEC Proposal List: Use this area to choose the encryption and authentification methods for IPSec proposals by choosing from the drop-down menus.

IPSec Lifetime: Enter the amount of time in seconds that the Phase 2 keys should last.



PPTP/L2TP Settings

This page allows you to set up a VPN using either PPTP or L2TP.



PPTP/L2TP: Check this box to enable PPTP/L2TP settings.

Name: Enter a name for your VPN.

Connection Type: Select **PPTP** or **L2TP**.

VPN Server IP: Enter the IP address of the VPN server.

Remote IP Range: Enter the remote IP range in the boxes.

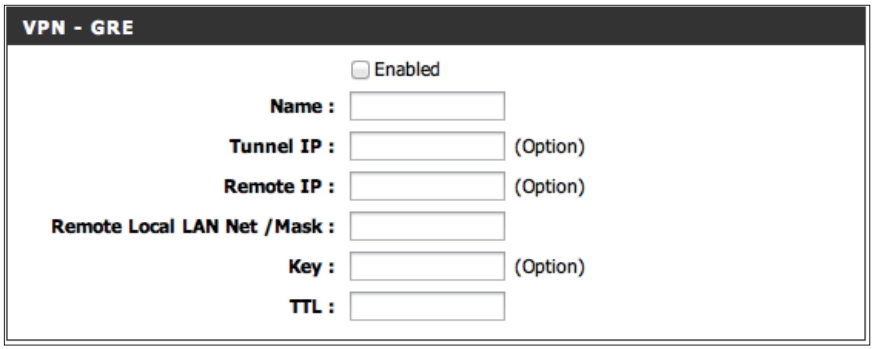
Authentification Protocol: Choose **PAP**, **CHAP**, or **MSCHAP v2** for your authentification.

MPPE Encryption Mode: Choose either **RC4**, **None**, **40 bit**, or **128 bit** to determine the strength level of your authentification.

Extended Authentification: If you wish to use extended authentification, choose a group from the drop-down menu.

GRE Settings

This page shows you the options for setting up a VPN tunnel using Generic Routing Encapsulation (GRE), which is a tunneling protocol that can encapsulate a wide variety of network layer protocols inside virtual point-to-point links over an Internet Protocol.



VPN - GRE Enable: Check this box to enable GRE VPN settings.

Name: Enter a name for your VPN.

Tunnel IP: Select an IP address for the tunnel.

Remote IP: Select an IP address to access the tunnel remotely.

Remote Local LAN Net/Mask: Enter the remote local (LAN) subnet and mask. (ex. 192.168.0.0/24)

Key: Enter the key for the tunnel.

TTL: Enter the time to live for packets delivered.

Advanced
Virtual Server

This will allow you to open a single port. If you would like to open a range of ports, refer to the next page.

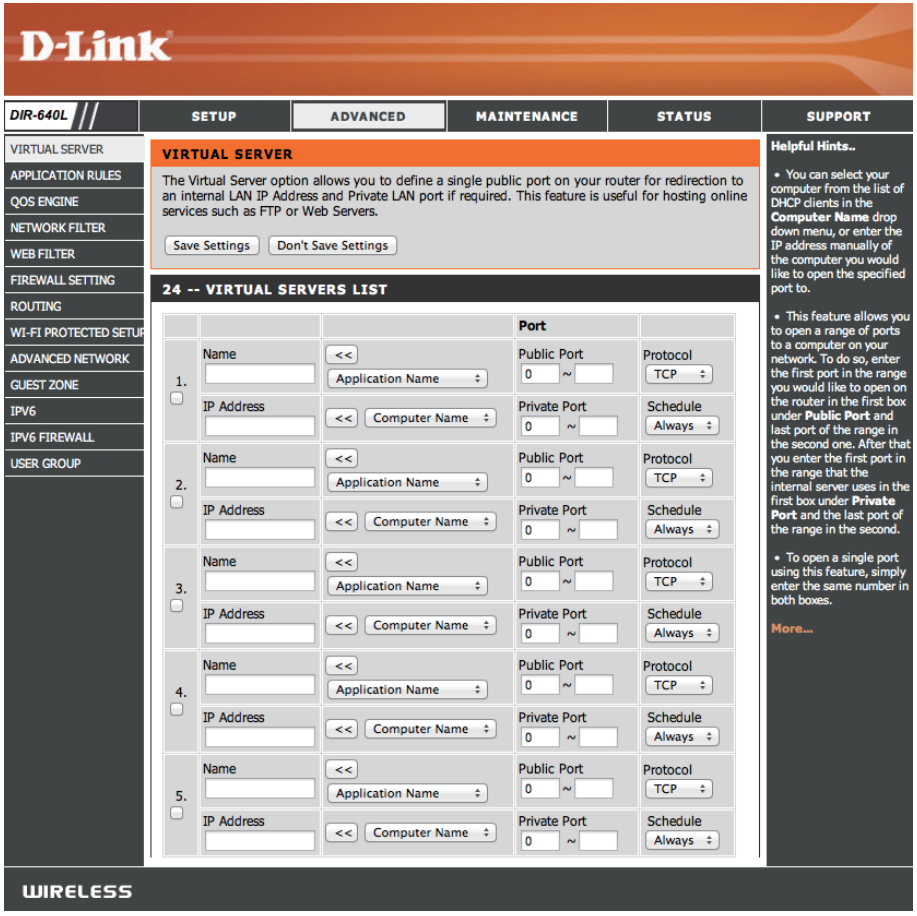
Name: Enter a name for the rule or select an application from the drop-down menu. Select an application and click << to populate the fields.

IP Address: Enter the IP address of the computer on your local network that you want to allow the incoming service to. If your computer is receiving an IP address automatically from the router (DHCP), you computer will be listed in the "Computer Name" drop-down menu. Select your computer and click.

Private Port/ Public Port: Enter the port that you want to open next to Private Port and Public Port. The private and public ports are usually the same. The public port is the port seen from the Internet side, and the private port is the port being used by the application on the computer within your local network.

Protocol Type: Select **TCP**, **UDP**, or **Both** from the drop-down menu.

Schedule: The schedule of time when the Virtual Server Rule will be enabled. The schedule may be set to Always, which will allow the particular service to always be enabled. You can create your own times in the **Maintenance** > **Schedules** section.



Application Rules

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications have difficulties working through NAT (Network Address Translation). Special Applications makes some of these applications work with the DIR-640L. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP or UDP, then enter the firewall (public) ports associated with the trigger port to open them for inbound traffic.

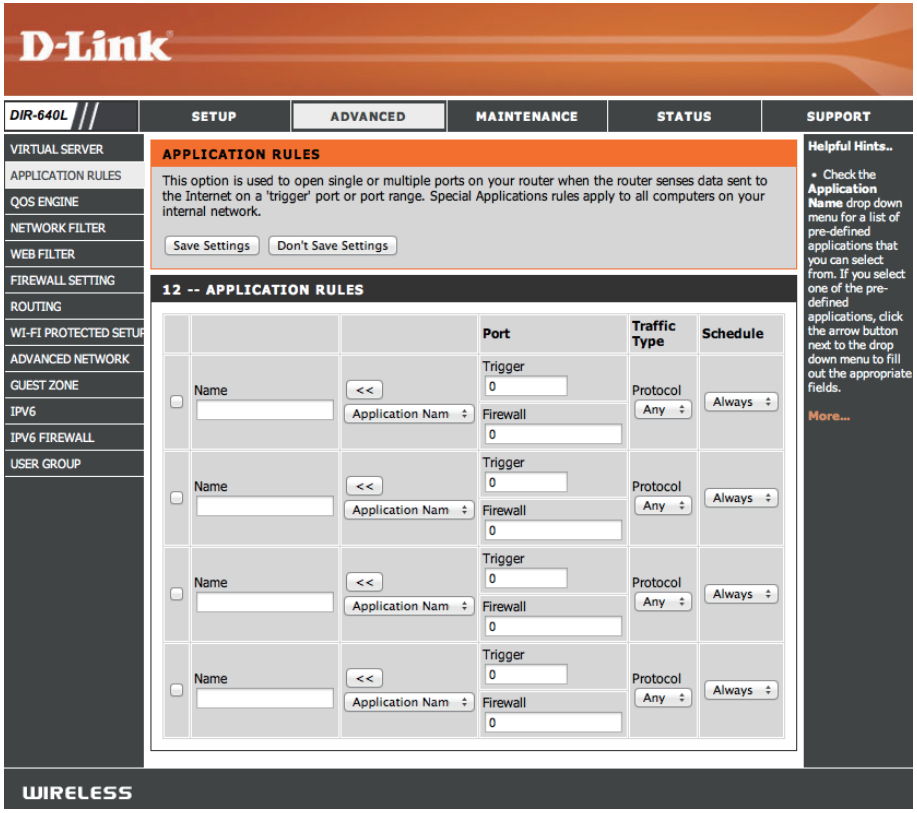
Name: Enter a name for the rule. You may select a pre-defined application from the drop-down menu and click.

Trigger: This is the port used to trigger the application. It can be either a single port or a range of ports.

Firewall: This is the port number on the Internet side that will be used to access the application. You may define a single port or a range of ports. You can use a comma to add multiple ports or port ranges.

Traffic Type: Select the protocol of the firewall port (TCP, UDP, or Both).

Schedule: The schedule of time when the Application Rule will be enabled. The schedule may be set to Always, which will allow the particular service to always be enabled. You can create your own times in the **Maintenance** > **Schedules** section.



QoS Engine

The QoS Engine option helps improve your network gaming performance by prioritizing applications. By default the QoS Engine settings are disabled and application priority is not classified automatically.

Enable QoS Engine: This option is disabled by default. Enable this option for better performance and experience with online games and other interactive applications, such as VoIP.

Upstream Bandwidth: The speed at which data can be transferred from the router to your ISP. This is determined by your ISP. ISP's often speed as a download/upload pair. For example, 1.5Mbits/284Kbits. Using this example, you would enter 284. Alternatively you can test your uplink speed with a service such as speedtest.net.

QoS Engine Rules: A QoS Engine Rule identifies a specific message flow and assigns a priority to that flow. For most applications, automatic classification will be adequate, and specific QoS Engine Rules will not be required.

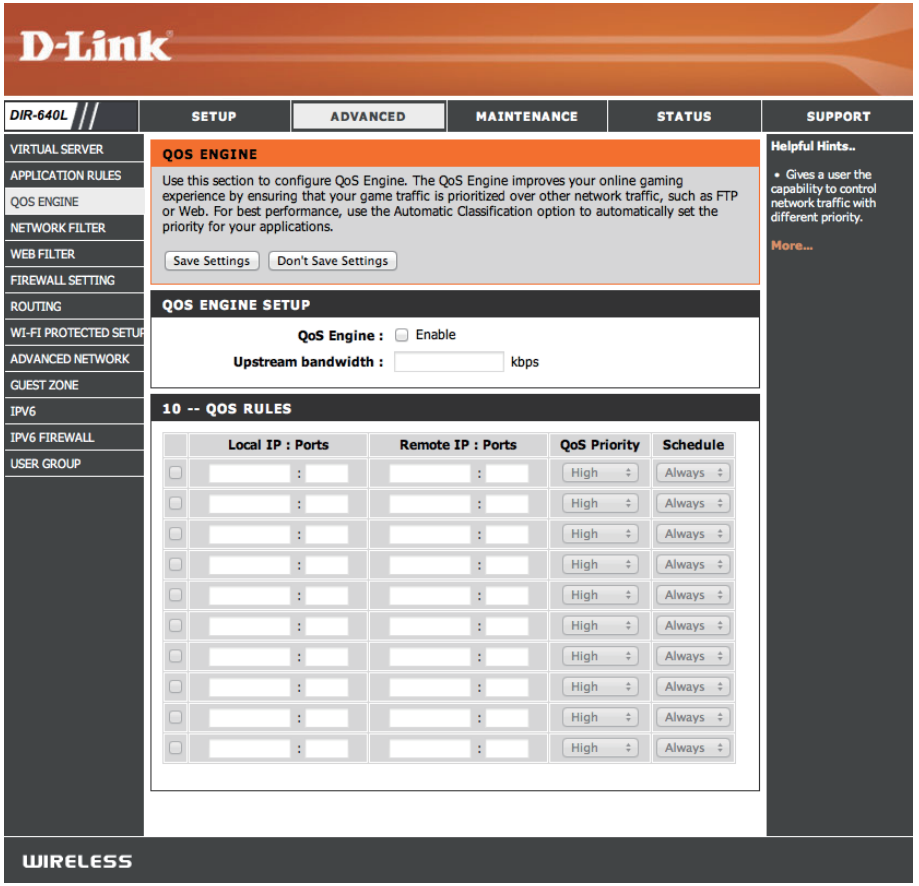
The QoS Engine supports overlaps between rules, where more than one rule can match for a specific message flow. If more than one rule is found to match the rule with the highest priority will be used.

Local IP: The rule applies to a flow of messages whose LAN-side IP address falls within the range set here.

Local Port: The rule applies to a flow of messages whose LAN-side port number is within the range set here.

Remote IP: The rule applies to a flow of messages whose WAN-side IP address falls within the range set here.

Remote Port: The rule applies to a flow of messages whose WAN-side port number is within the range set here.



Priority: The priority of the message flow is entered here -- 1 receives the highest priority (most urgent) and 255 receives the lowest priority (least urgent).

Schedule: Choose a schedule for the QoS rule.

Network Filter

Use MAC (Media Access Control) Filters to allow or deny LAN (Local Area Network) computers by their MAC addresses from accessing the network. You can either manually add a MAC address or select the MAC address from the list of clients that are currently connected to the Broadband Router.

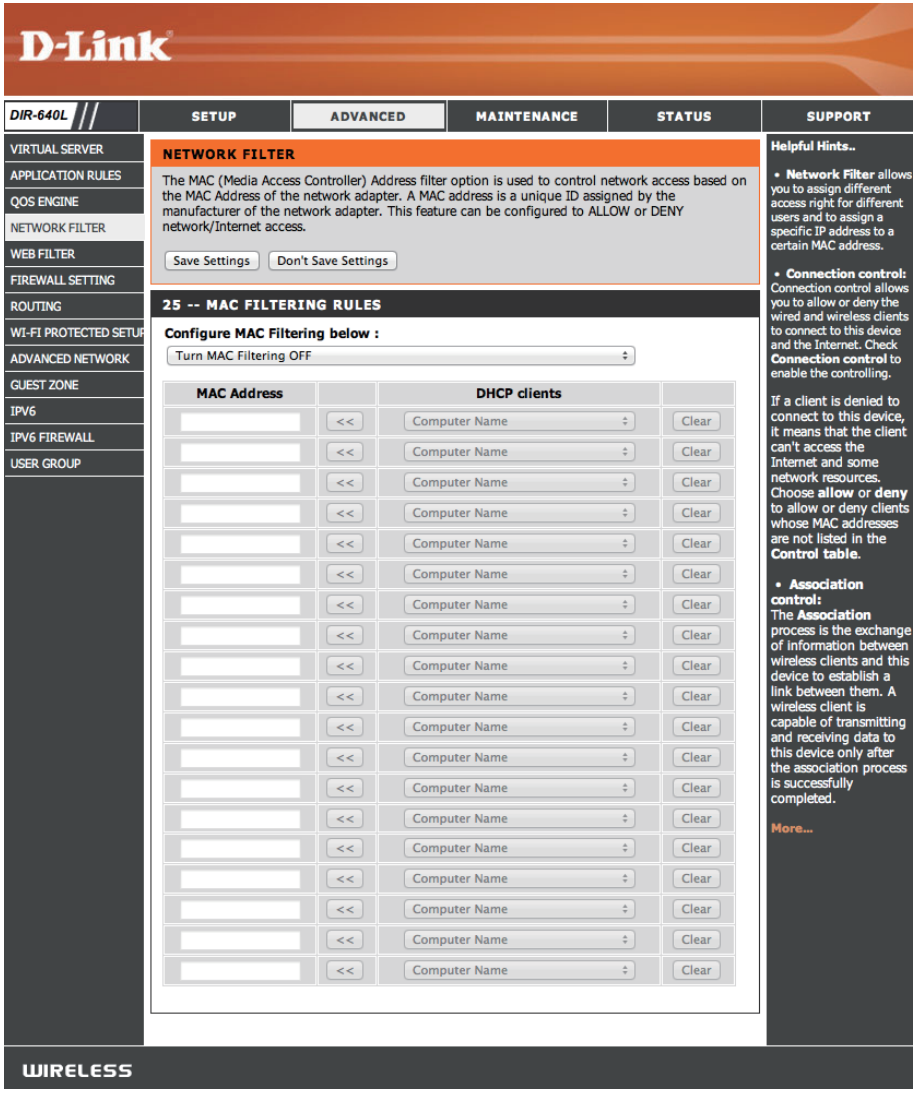
Configure MAC Filtering: Select **Turn MAC Filtering Off**, **Allow MAC addresses listed below**, or **Deny MAC addresses listed below** from the drop-down menu.

MAC Address: Enter the MAC address you would like to filter.

To find the MAC address on a computer, please refer to the *Networking Basics* section in this manual.

DHCP Client: Select a DHCP client from the drop-down menu and click **<<** to copy that MAC Address.

Clear: Click to remove the MAC address.



Web Filter

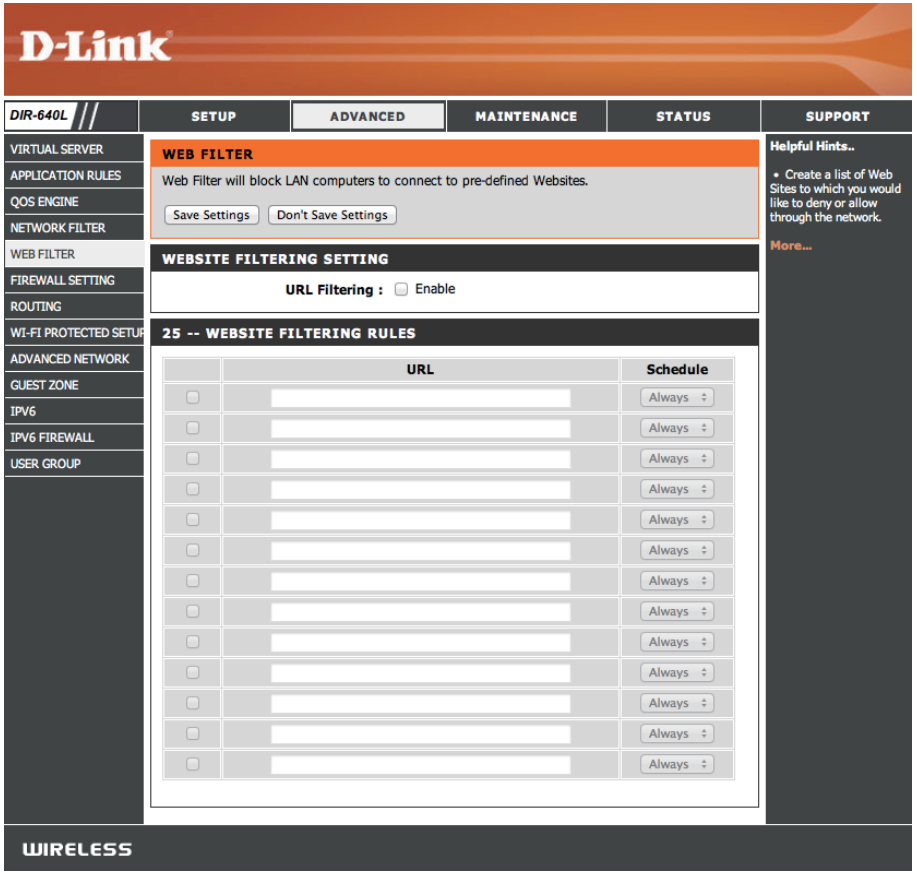
Website Filters are used to allow you to set up a list of Web sites that can be viewed by multiple users through the network. To use this feature select to **Allow** or **Deny**, enter the domain or website and click **Save Settings**. You must also select **Apply Web Filter** under the *Access Control* section.

URL Filtering: Enable URL filtering by checking this box.

Enable Rule: Click to enable or disable a rule.

Website URL/ Domain: Enter the keywords or URLs that you want to allow or block. Click **Save Settings**.

Schedule: Choose a schedule for the rule.



Firewall Setting

A firewall protects your network from the outside world. The DIR-640L offers a firewall type functionality. The SPI feature helps prevent cyber attacks. Sometimes you may want a computer exposed to the outside world for certain types of applications. If you choose to expose a computer, you can enable DMZ. DMZ is short for Demilitarized Zone. This option will expose the chosen computer completely to the outside world.

Enable DMZ: If an application has trouble working from behind the router, you can expose one computer to the Internet and run the application on that computer.

Note: *Placing a computer in the DMZ may expose that computer to a variety of security risks. Use of this option is only recommended as a last resort.*

DMZ IP Address: Specify the IP address of the computer on the LAN that you want to have unrestricted Internet communication. If this computer obtains it's IP address automatically using DHCP, be sure to make a static reservation on the **Setup** > **Network Settings** page so that the IP address of the DMZ machine does not change.

Firewall Rules: Choose whether to Allow or Deny the addresses you list below.

Name: Enter a name to identify the firewall rule.

Action: Choose whether to Allow or Deny all of the rules listed below.

Source: Use the **Source** drop-down menu to specify the interface that connects to the source addresses of the firewall rule.

Schedule: Use the drop-down menu to select the time schedule that the IPv6 Firewall Rule will be enabled on. The schedule may be set to **Always**, which will allow the particular service to always be enabled. You can create your own times in the **Maintenance** > **Schedules** section.

IP Address Range: Enter the source **IP Address** range.

Destination: Use the **Destination** drop-down menu to specify the interface that connects to the destination IP addresses of the firewall rule.

Protocol: Select the protocol of the firewall port (**All**, **TCP**, **UDP**, or **ICMP**).

Port Range: Enter the first port of the range that will be used for the firewall rule in the first box and enter the last port in the field in the second box.

New Schedule: Click this button to create a new schedule.

Routing

The Routing option is an advanced method of customizing specific routes of data through your network.

Name: Enter a name for your route.

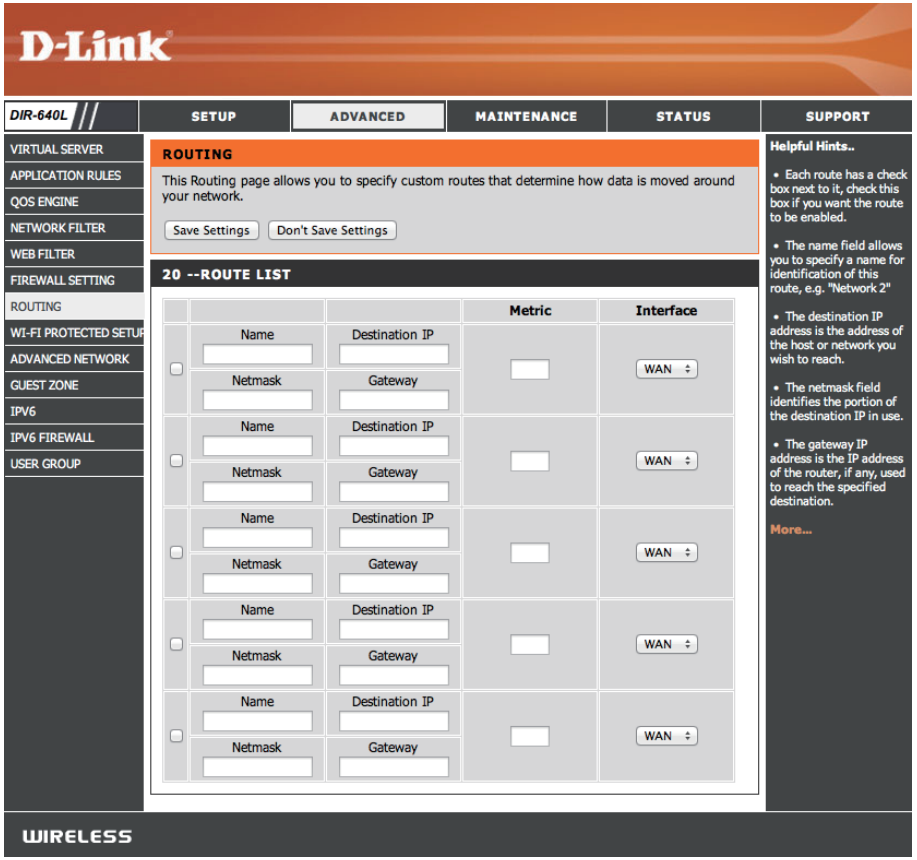
Destination IP: Enter the IP address of packets that will take this route.

Netmask: Enter the netmask of the route, please note that the octets must match your destination IP address.

Gateway: Enter your next hop gateway to be taken if this route is used.

Metric: The route metric is a value from 1 to 16 that indicates the cost of using this route. A value 1 is the lowest cost and 15 is the highest cost.

Interface: Select the interface that the IP packet must use to transit out of the router when this route is used.



Advanced Network Settings

The Advanced Network Settings page offers additional feature options for power users.

Enable UPnP: To use the Universal Plug and Play (UPnP™) feature click on **Enabled**. UPnP provides compatibility with networking equipment, software and peripherals.

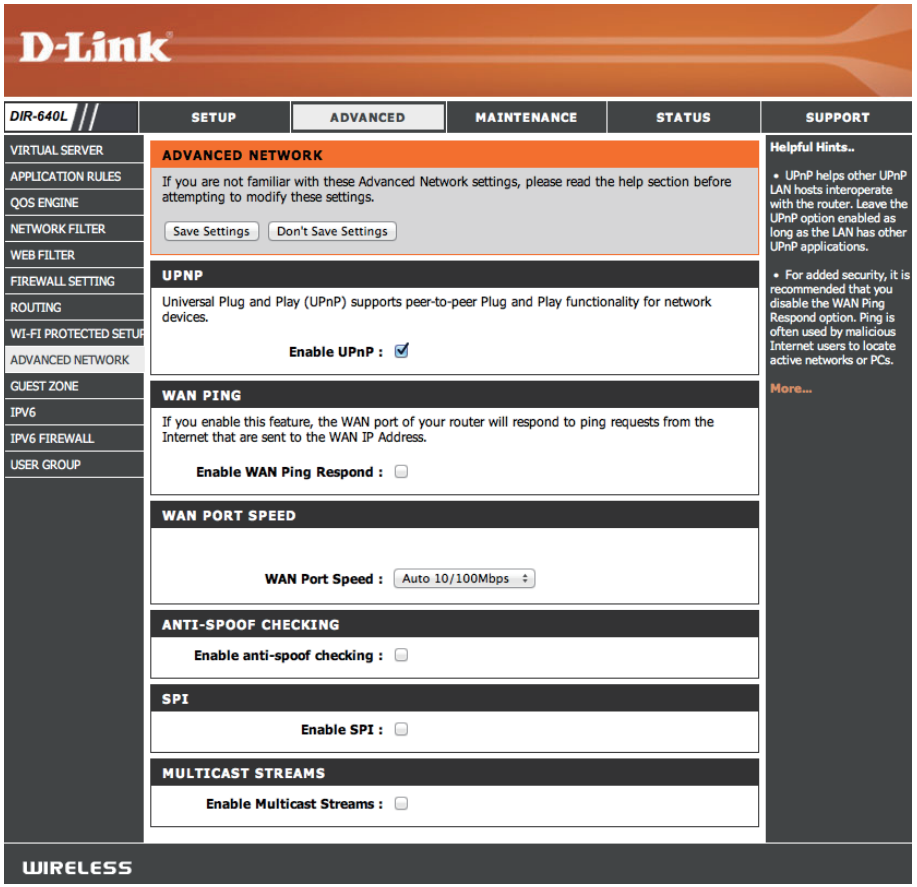
Enable WAN Ping Respond: Checking the box will allow the DIR-640L to respond to pings. Unchecking the box may provide some extra security from hackers.

WAN Port Speed: Choose your WAN port speed from the drop-down menu.

Enable Anti-Spoof Checking: Check this box to automatically check the origins of packets against a blacklist of known spoofers.

Enable SPI: Check this box to enable Stateful Packet Inspection which will only allow packets from known active connections and reject all others.

Enable Multicast Streams: Check the box to allow multicast traffic to pass through the router from the Internet.

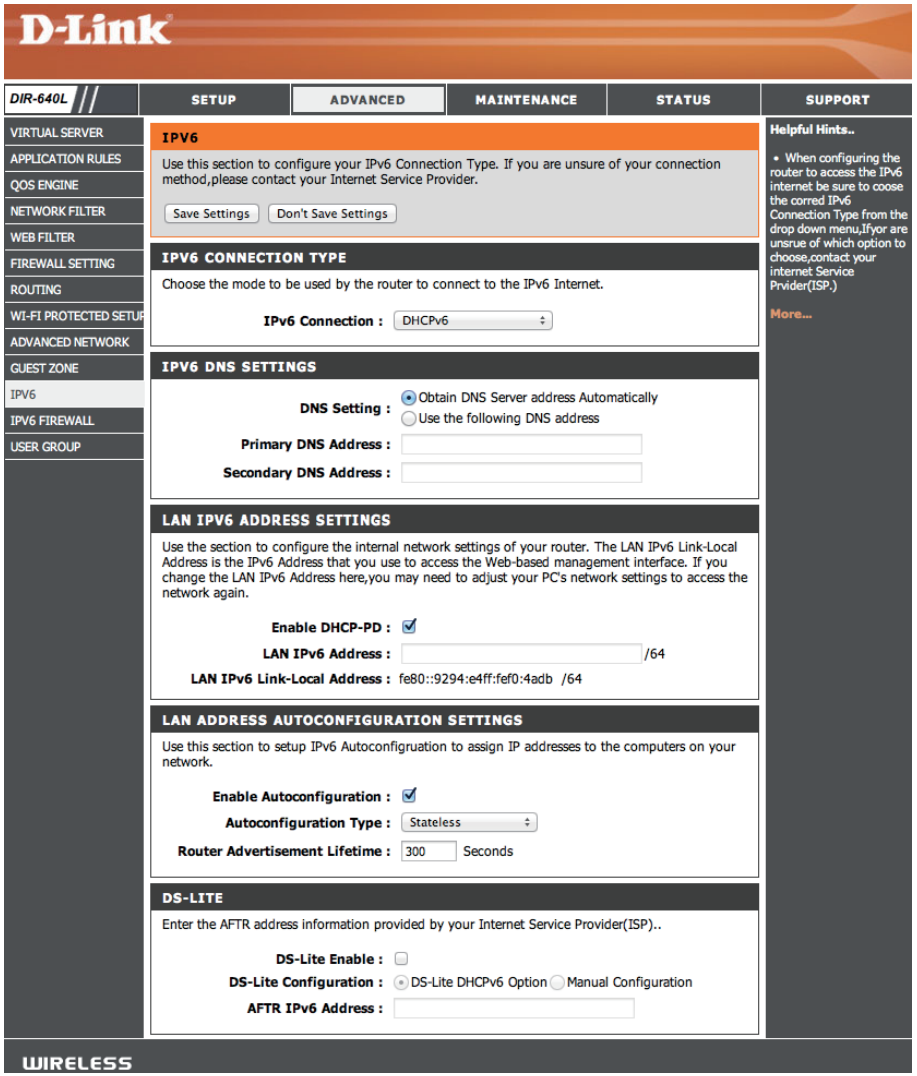


IPv6

There are several connection types to choose from: Static IPv6, DHCPv6, PPPoE, IPv6 in IPv4 Tunnel, 6to4, 6rd, and Link-local. If you are unsure of your connection method, please contact your IPv6 ISP.

Note: If using the PPPoE option, you will need to ensure that any PPPoE client software on your computers has been removed or disabled.

Choose your IPv6 connection method from the drop-down menu under the IPv6 Connection Type.



Static IPv6

My IPv6 Connection: Select **Static IPv6** from the drop-down menu.

WAN IPv6 Address Settings: Enter the address settings supplied by your Internet provider (ISP).

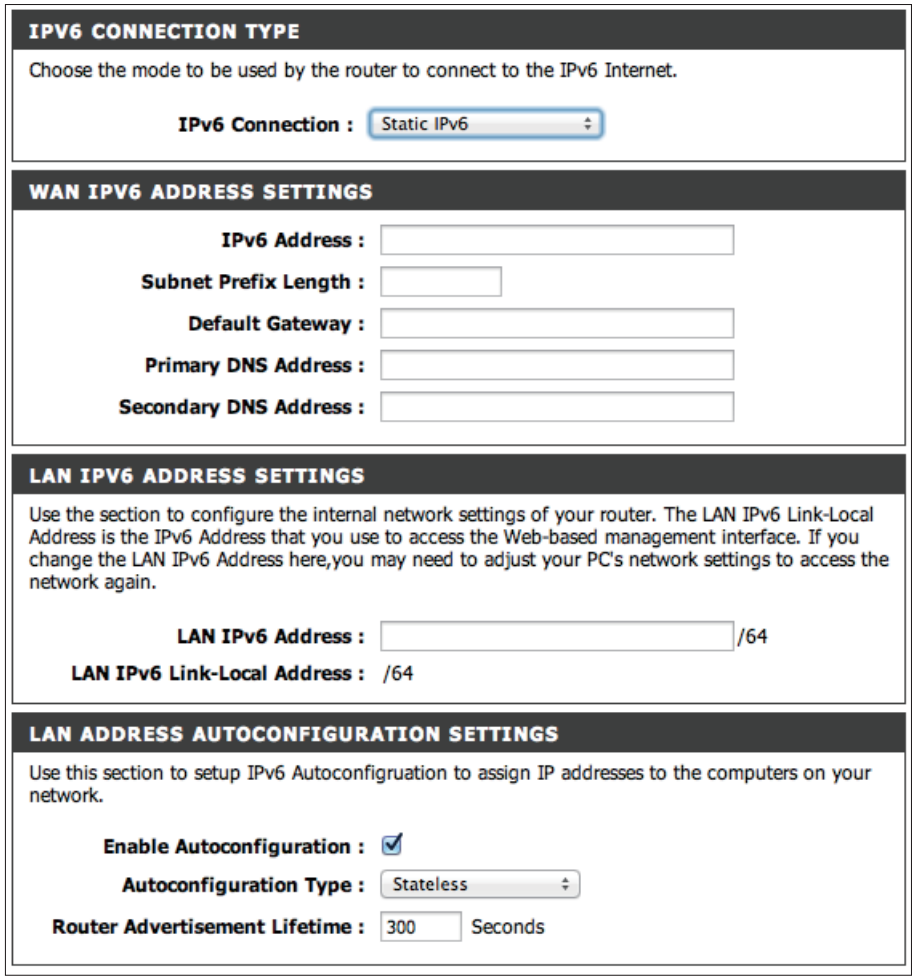
LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

LAN Link-Local Address: Displays the Router's LAN Link-Local Address.

Enable Autoconfiguration: Check to enable the Autoconfiguration feature.

Autoconfiguration Type: Select **Stateful** or **Stateless** autoconfiguration.

Router Advertisement Lifetime: Enter the IPv6 address lifetime (in seconds).



DHCP

My IPv6 Connection: Select **Autoconfiguration (Stateless/DHCPv6)** from the drop-down menu.

IPv6 DNS Settings: Select either **Obtain DNS server address automatically** or **Use the following DNS Address**.

Primary/Secondary DNS Address: Enter the primary and secondary DNS server addresses.

Enable DHCP-PD Check to enable DHCP-PD.

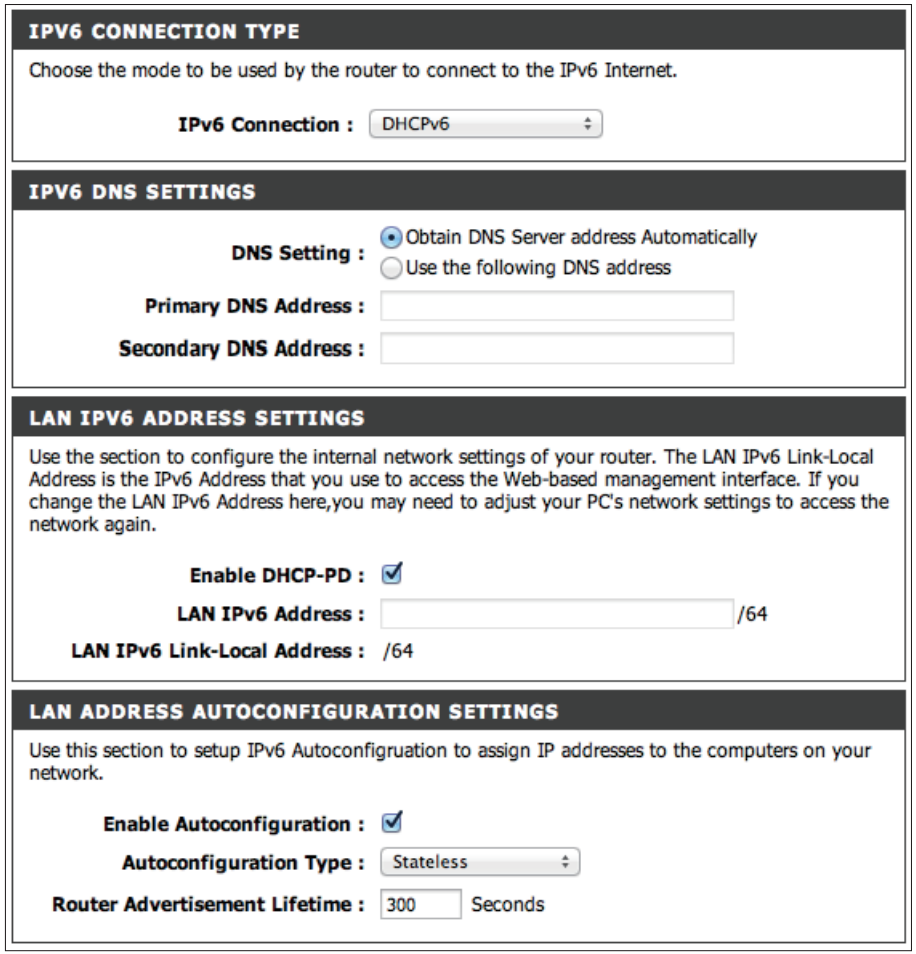
LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

LAN Link-Local Address: Displays the Router's LAN Link-Local Address.

Enable Autoconfiguration: Check to enable the Autoconfiguration feature.

Autoconfiguration Type: Select **Stateful** or **Stateless** autoconfiguration.

Router Advertisement Lifetime: Enter the IPv6 address lifetime (in seconds).



PPPoE

My IPv6 Connection: Select **PPPoE** from the drop-down menu.

PPPoE: Enter the PPPoE account settings supplied by your Internet provider (ISP).

User Name: Enter your PPPoE user name.

Password: Enter your PPPoE password and then retype the password in the next box.

Service Name: Enter the ISP Service Name (optional).

MTU: Maximum Transmission Unit - you may need to change the MTU for optimal performance with your specific ISP. 1492 is the default MTU.

IPv6 DNS Settings: Select either **Obtain DNS server address automatically** or **Use the following DNS Address**.

Primary/Secondary DNS Address: Enter the primary and secondary DNS server addresses.

Enable DHCP-PD Check to enable DHCP-PD.

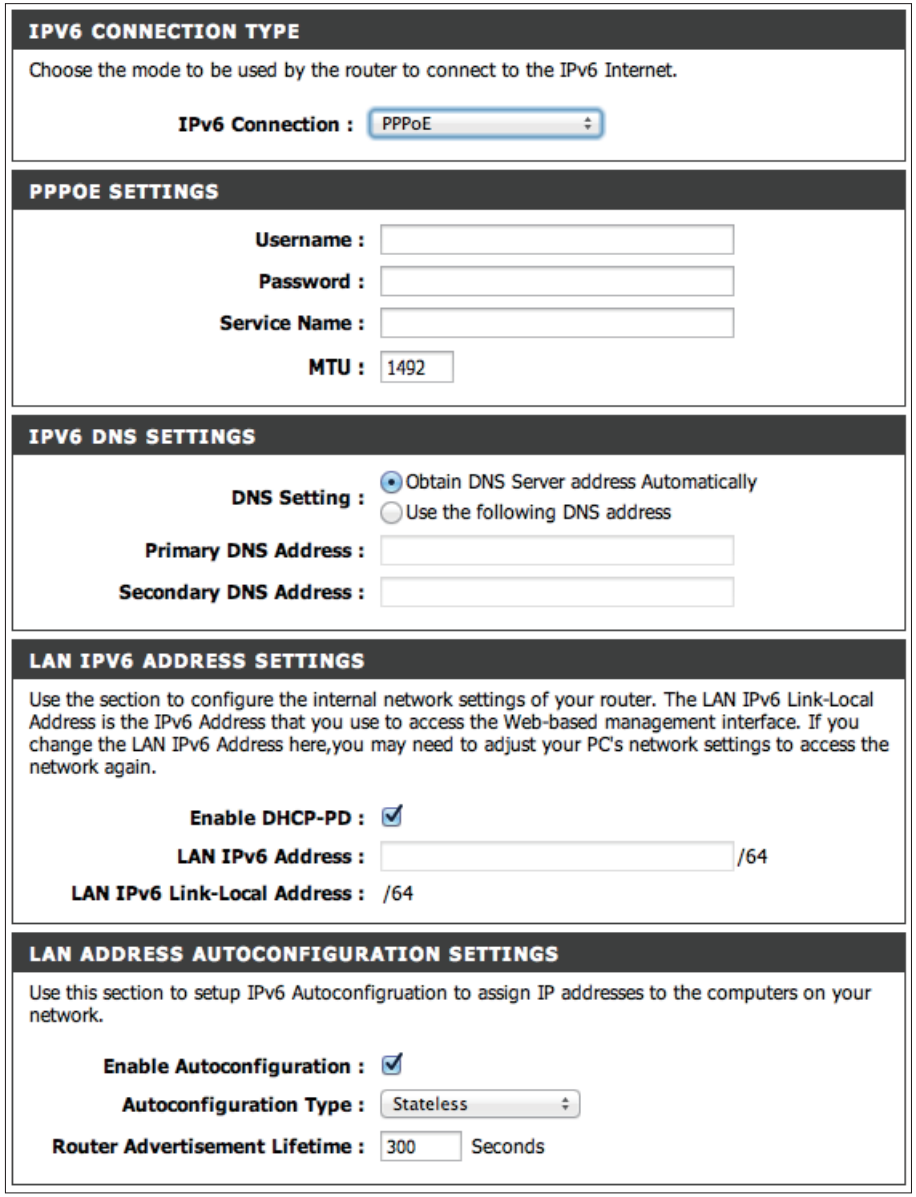
LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

LAN Link-Local Address: Displays the Router's LAN Link-Local Address.

Enable Autoconfiguration: Check to enable the Autoconfiguration feature.

Autoconfiguration Type: Select **Stateful** or **Stateless** autoconfiguration.

Router Advertisement Lifetime: Enter the IPv6 address lifetime (in seconds).



IPv6 over IPv4 Tunneling

My IPv6 Connection: Select **IPv6 over IPv4 Tunnel** from the drop-down menu.

IPv6 in IPv4 Tunnel Settings: Enter the settings supplied by your Internet provider (ISP).

IPv6 DNS Settings: Select either **Obtain DNS server address automatically** or **Use the following DNS Address**.

Primary/Secondary DNS Address: Enter the primary and secondary DNS server addresses.

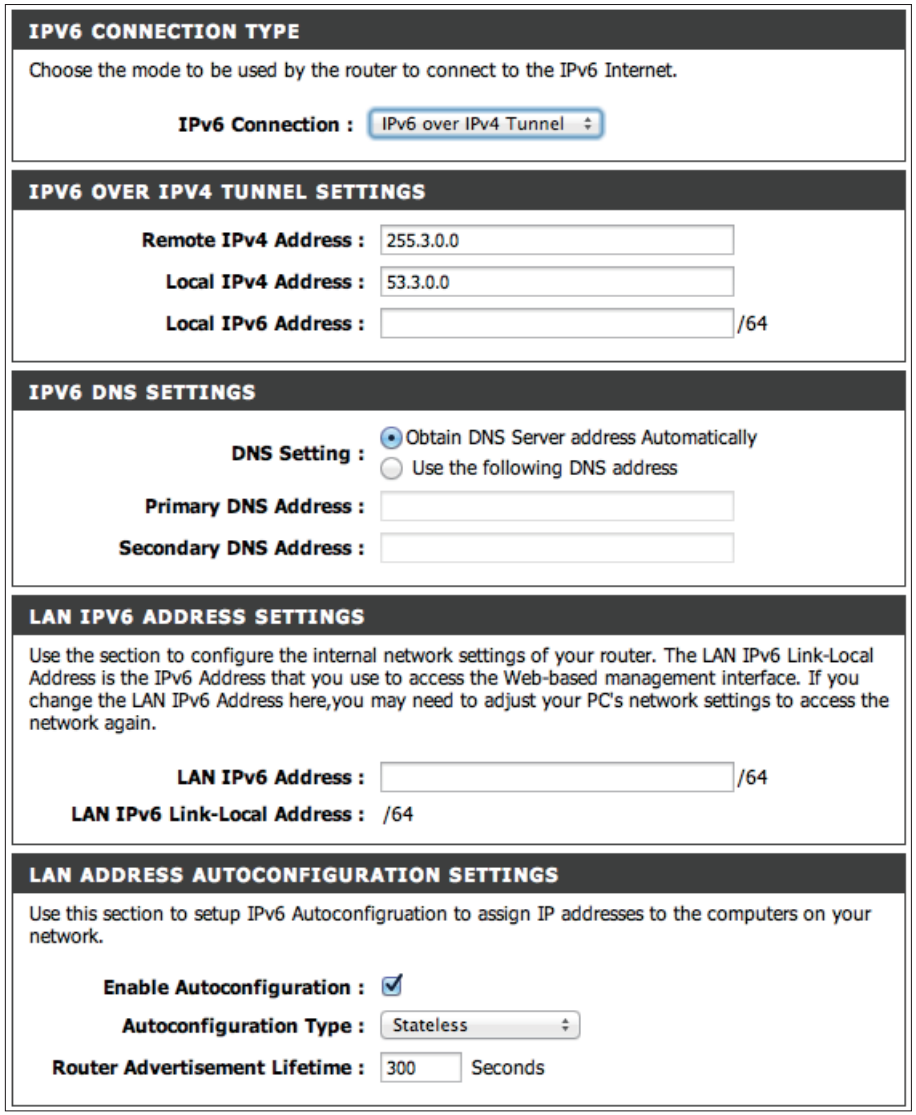
LAN IPv6 Address: Enter the LAN (local) IPv6 address for the router.

LAN Link-Local Address: Displays the Router's LAN Link-Local Address.

Enable Autoconfiguration: Check to enable the Autoconfiguration feature.

Autoconfiguration Type: Select **Stateful** or **Stateless** autoconfiguration.

Router Advertisement Lifetime: Enter the IPv6 address lifetime (in seconds).



6 to 4 Tunneling

My IPv6 Connection: Select **6 to 4** from the drop-down menu.

6 to 4 Settings: Enter the IPv6 settings supplied by your Internet provider (ISP).

Primary/Secondary DNS Address: Enter the primary and secondary DNS server addresses.

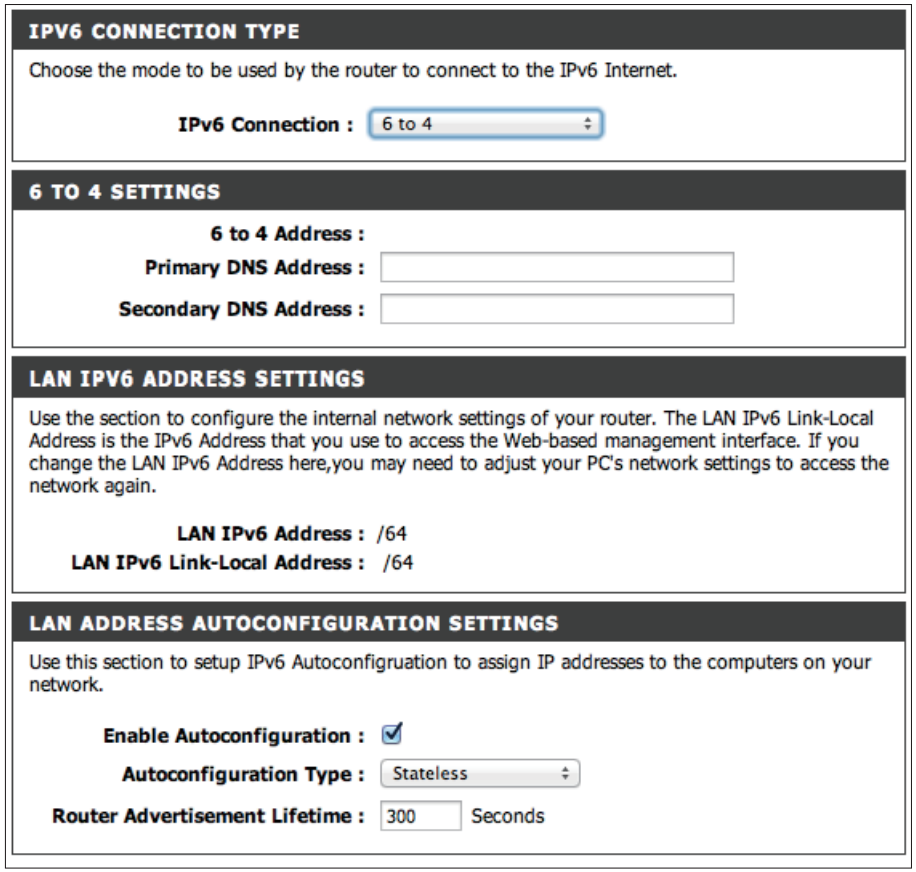
LAN IPv6 Address: Displays the LAN (local) IPv6 address for the router.

LAN Link-Local Address: Displays the Router's LAN Link-Local Address.

Enable Autoconfiguration: Check to enable the Autoconfiguration feature.

Autoconfiguration Type: Select **Stateful** or **Stateless** autoconfiguration.

Router Advertisement Lifetime: Enter the IPv6 address lifetime (in seconds).



6rd

My IPv6 Connection: Select **6rd** from the drop-down menu.

6RD Settings: Enter the address settings supplied by your Internet provider (ISP).

Remote IPv4 Address: Enter the IPv4 (remote) address here.

IPv4 Mask Length: Enter the mask length of the IPv4 address.

Remote Prefix: Enter the remote prefix of the IPv4 address.

Prefix Length: Enter the length of the remote prefix.

Primary/Secondary DNS Addresses: Enter the DNS server addresses.

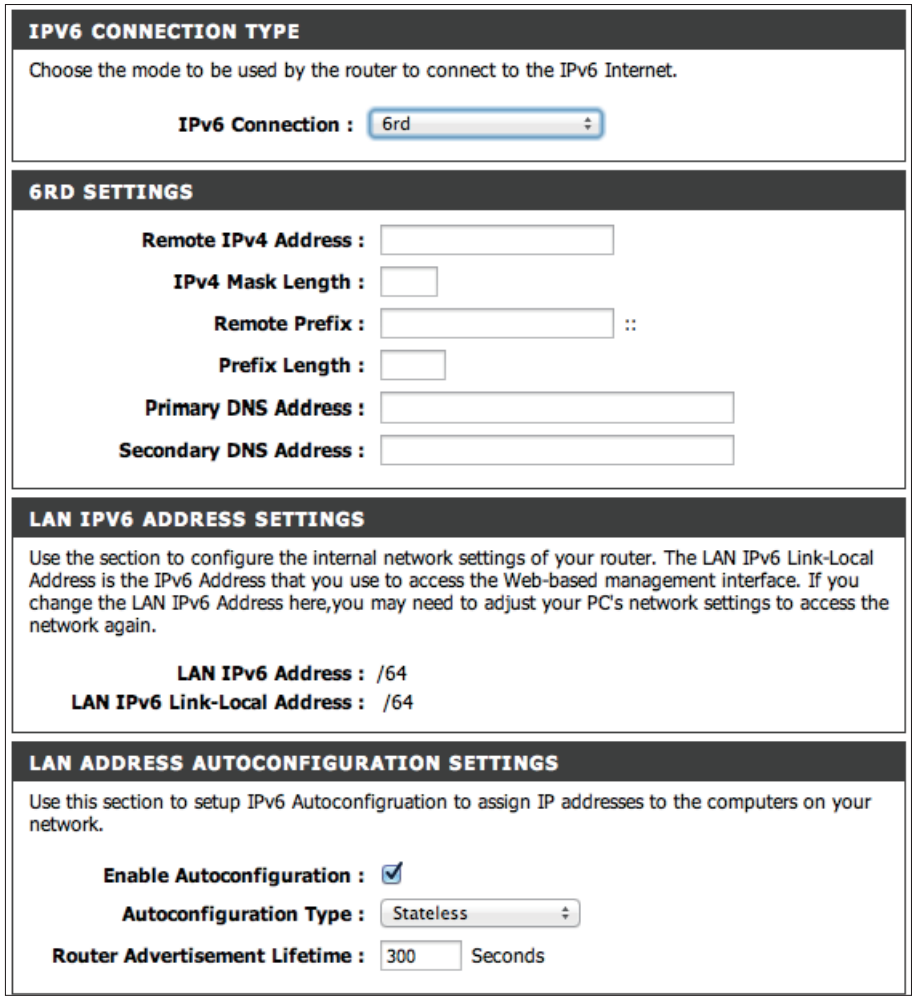
LAN IPv6 Address: Displays the LAN (local) IPv6 address for the router.

LAN Link-Local Address: Displays the Router's LAN Link-Local Address.

Enable Autoconfiguration: Check to enable the Autoconfiguration feature.

Autoconfiguration Type: Select **Stateful** or **Stateless** autoconfiguration.

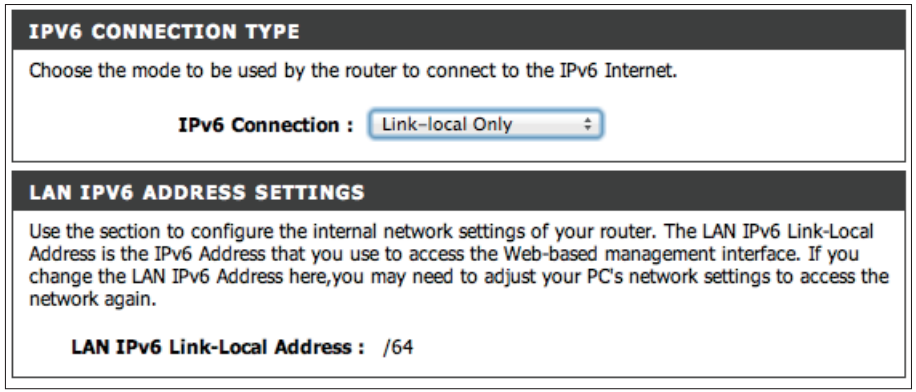
Router Advertisement Lifetime: Enter the IPv6 address lifetime (in seconds).



Link-Local Connectivity

My IPv6 Connection: Select **Link-Local Only** from the drop-down menu.

LAN IPv6 Address Settings: Displays the IPv6 address of the router.



IPv6 Firewall

The IPv6 Firewall feature allows you to configure which kind of IPv6 traffic is allowed to pass through the device. The IPv6 Firewall functions in a similar way to the IP Filters feature.

Enable IPv6 Simple Security: Check the box to enable the IPv6 firewall simple security.

Configure IPv6 Firewall: Select an action from the drop-down menu.

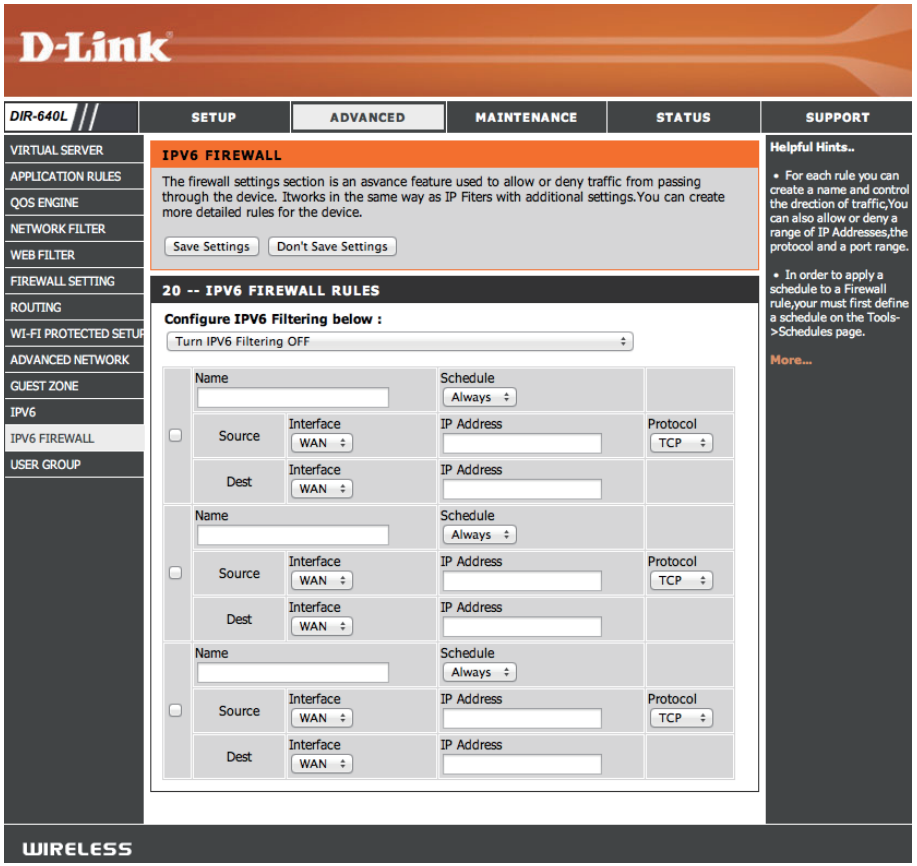
Name: Enter a name to identify the IPv6 firewall rule.

Schedule: Use the drop-down menu to select the time schedule that the IPv6 Firewall Rule will be enabled on. The schedule may be set to **Always**, which will allow the particular service to always be enabled. You can create your own times in the **Maintenance** > **Schedules** section.

Source: Use the **Source** drop-down menu to specify the interface that connects to the source IPv6 addresses of the firewall rule.

IP Address Range: Enter the source IPv6 address range in the adjacent **IP Address Range** field.

Destination: Use the **Destination** drop-down menu to specify the interface that connects to the destination IP addresses of the firewall rule.



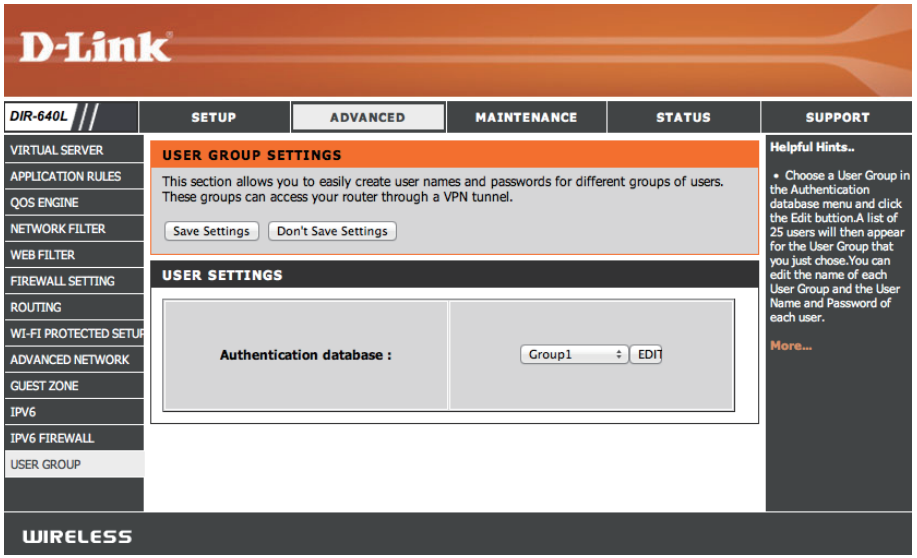
Protocol: Select the protocol of the firewall port (**All**, **TCP**, **UDP**, or **ICMP**). Enter the first port of the range that will be used for the firewall rule in the first box and enter the last port in the field in the second box.

User Group

The User Group feature allows you to select an authentification database to store a group of user settings

User Settings: Here you will find a list of Authetification databases you have created.

Authentification database: Choose a database from the drop-down menu and choose Edit to make changes.



Maintenance
Admin

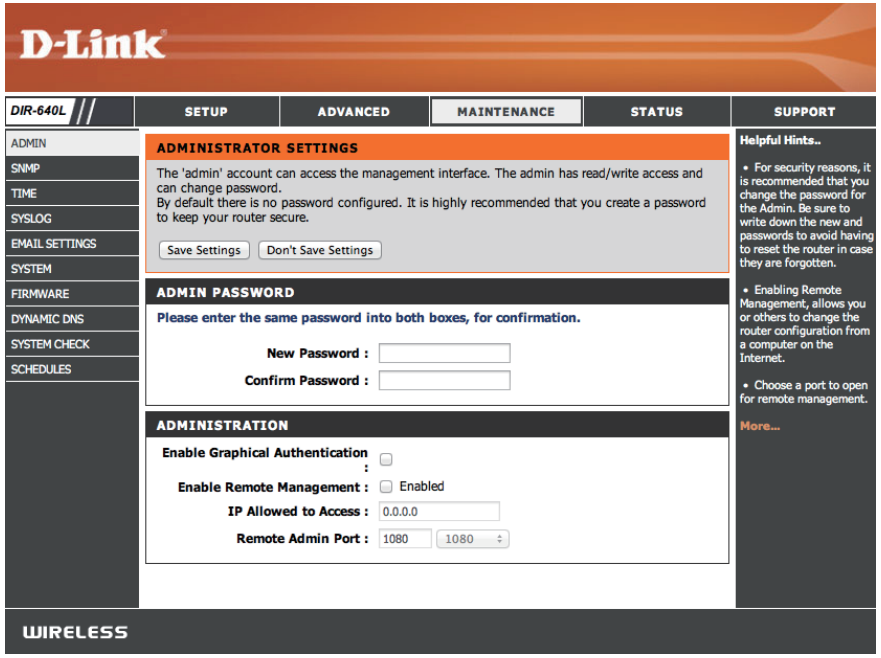
This page will allow you to change the Administrator and User passwords. You can also enable Remote Management. There are two accounts that can access the management interface through the web browser. The accounts are admin and user. Admin has read/write access while user has read-only access. User can only view the settings but cannot make any changes. Only the admin account has the ability to change both admin and user account passwords.

Admin Password: Enter a new password for the Administrator Login Name. And type it again in the next box.

Enable Remote Management: Remote management allows the DIR-640L to be configured from the Internet by a web browser. A username/password is still required to access the Web Management interface.

IP Allowed to Access: Enter the IP address used to access the DIR-640L.

Remote Admin Port: Enter the port number used to access the DIR-640L is used in the URL. Example: **http://x.x.x.x:8080** whereas x.x.x.x is the Internet IP address of the DIR-640L and 8080 is the port used for the Web Management interface.



SNMP

The DIR-640L allows you to use the Simple Network Management Protocol for easy management of your network.

SNMPLocal: Enable this option to allow local SNMP management.

SNMPLocal: Enable this option to allow remote SNMP management.

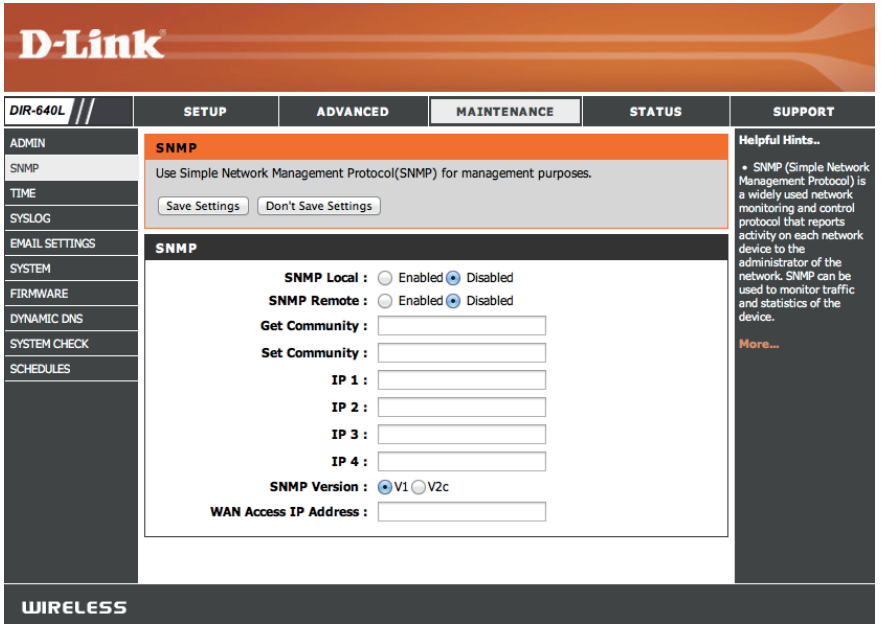
Get Community: Enter a name for the read community of your SNMP server.

Set Community: Enter a name for the write community of your SNMP server.

IP1-4: Set up to four IP addresses to be managed here.

SNMP Variation: Choose the version of SNMP to be used by your server V1 or V2c..

WAN Access IP Address: Enter the IP address used for WAN access here.



Time

The Time Configuration option allows you to configure, update, and maintain the correct time on the internal system clock. From this section you can set the time zone that you are in and set the Time Server. Daylight Saving can also be configured to automatically adjust the time when needed.

Current Router Time: Displays the current date and time of the router.

Time Zone: Select your Time Zone from the drop-down menu.

Enable Daylight Saving: To select Daylight Saving time manually, select enabled or disabled, and enter a start date and an end date for daylight saving time.

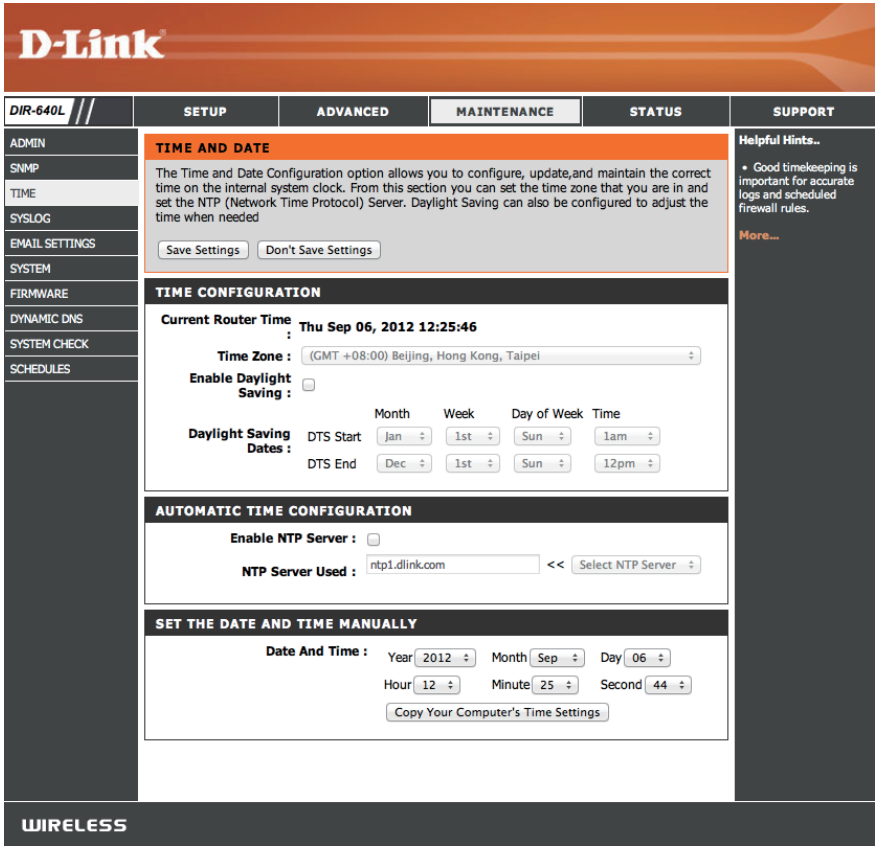
Daylight Saving Dates: If Daylight Saving is enabled, you may specify the date it begins and ends.

Enable NTP Server: NTP is short for Network Time Protocol. A NTP server will synch the time and date with your router. This will only connect to a server on the Internet, not a local server. Check the box to enable this feature.

NTP Server Used: Enter the IP address of a NTP server or select one from the drop-down menu.

Date And Time: To manually input the time, enter the values in these fields for the Year, Month, Day, Hour, Minute, and Second and then click **Set Time**.

You can also click **Copy Your Computer's Time Settings** to synch the date and time with the computer you are currently on.



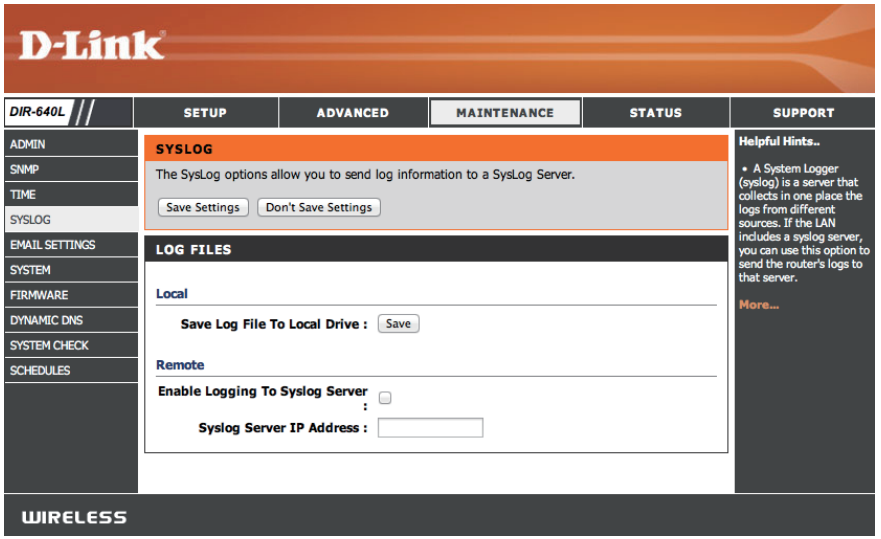
SysLog

The Broadband Router keeps a running log of events and activities occurring on the Router. You may send these logs to a SysLog server on your network.

Save Log File To Local Drive: Click the **Save** button to save a local copy of the Log file on your PC.

Enable Logging to SysLog Server: Check this box to send the router logs to a SysLog Server.

SysLog Server IP Address: The address of the SysLog server that will be used to send the logs. You may also select your computer from the drop-down menu (only if receiving an IP address from the router via DHCP).



Email Settings

This section allows you to manage the router's configuration settings, reboot the router, and restore the router to the factory default settings. Restoring the unit to the factory default settings will erase all settings, including any rules that you've created.

Enable Email Notification: When this option is enabled, router activity logs are emailed to a designated email address.

To Email Address: Enter the email address where you want the email sent.

SMTP Server Address: Enter the SMTP server address for sending email.

SMTP Server Port: Enter the SMTP port used on the server.

Enable Authentication: Check this box if your SMTP server requires authentication.

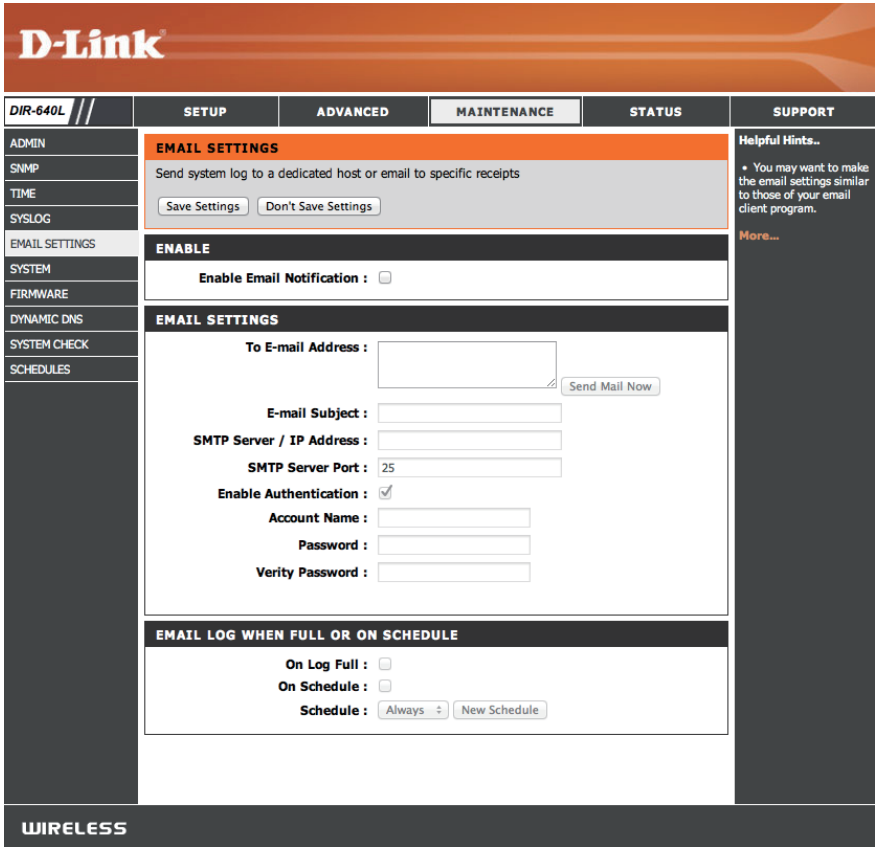
Account Name: Enter your account for sending email.

Password: Enter the password associated with the account. Re-type the password associated with the account.

On Log Full: When this option is selected, logs will be sent via email to your account when the log is full.

On Schedule: Selecting this option will send the logs via email according to schedule.

Schedule: This option is enabled when **On Schedule** is selected. You can select a schedule from the list of defined schedules.
To create a schedule, go to **Maintenance > Schedules**.



System

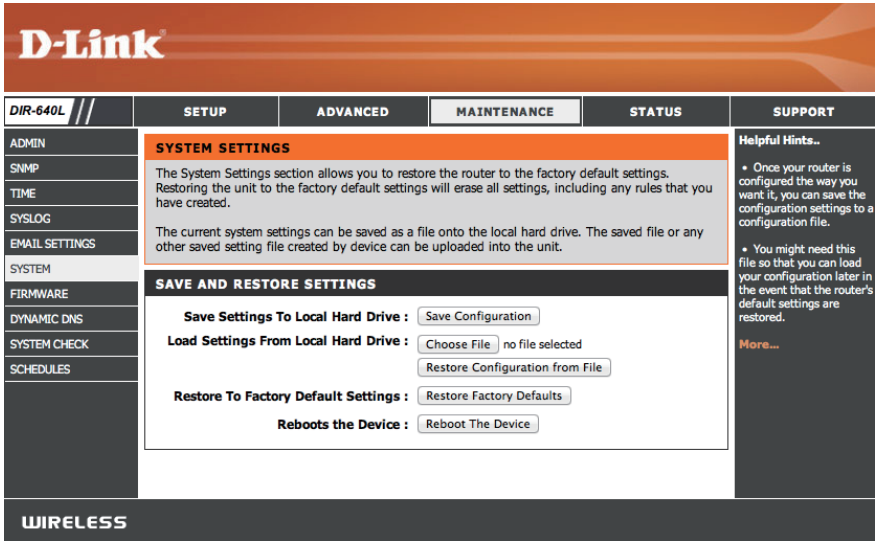
This section allows you to manage the router's configuration settings, reboot the router, and restore the router to the factory default settings. Restoring the unit to the factory default settings will erase all settings, including any rules that you've created.

Save Settings to Local Hard Drive: Use this option to save the current router configuration settings to a file on the hard disk of the computer you are using. First, click the **Save** button. A file dialog will appear, allowing you to select a location and file name for the settings.

Load Settings from Local Hard Drive: Use this option to load previously saved router configuration settings. First, use the **Browse** option to find a previously saved file of configuration settings. Then, click the **Load** button to transfer those settings to the router.

Restore to Factory Default Settings: This option will restore all configuration settings back to the settings that were in effect at the time the router was shipped from the factory. Any settings that have not been saved will be lost, including any rules that you have created. If you want to save the current router configuration settings, use the **Save** button above.

Reboot Device: Click to reboot the router.



Firmware

You can upgrade the firmware of the access point here. Make sure the firmware you want to use is on the local hard drive of the computer. Click on **Browse** to locate the firmware file to be used for the update. Please check the D-Link support website for firmware updates at http://support.dlink.com. You can download firmware upgrades to your hard drive from this site.

Check Now: Click **Check Now** to check for new firmware and language pack versions online.

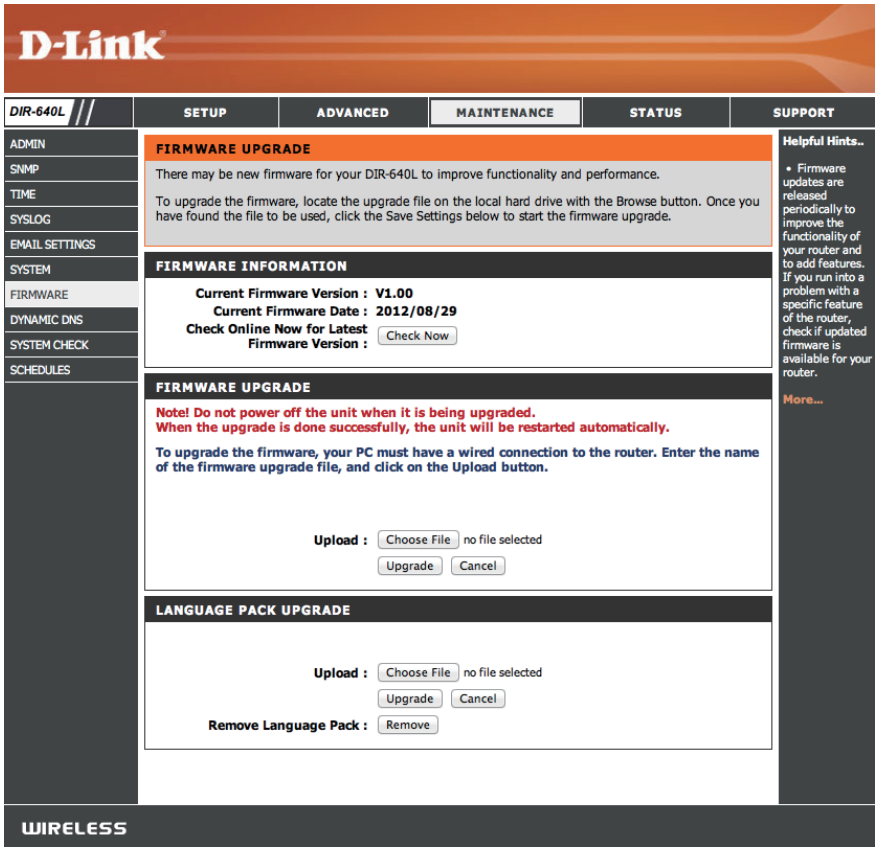
Choose File: After you have downloaded the new firmware, click **Choose File** to locate the firmware update on your hard drive.

Upgrade: Click **Upgrade** to complete the firmware upgrade.

Choose File: After you have downloaded the new language pack, click **Choose File** to locate the language pack file on your hard drive.

Upgrade: Click **Upgrade** to complete the language pack upgrade.

Remove: Click **Remove** to delete an installed Language Pack.



Dynamic DNS

The DDNS feature allows you to host a server (Web, FTP, Game Server, etc…) using a domain name that you have purchased (www.whateveryournameis.com) with your dynamically assigned IP address. Most broadband Internet Service Providers assign dynamic (changing) IP addresses. Using a DDNS service provider, your friends can enter in your domain name to connect to your server no matter what your IP address is.

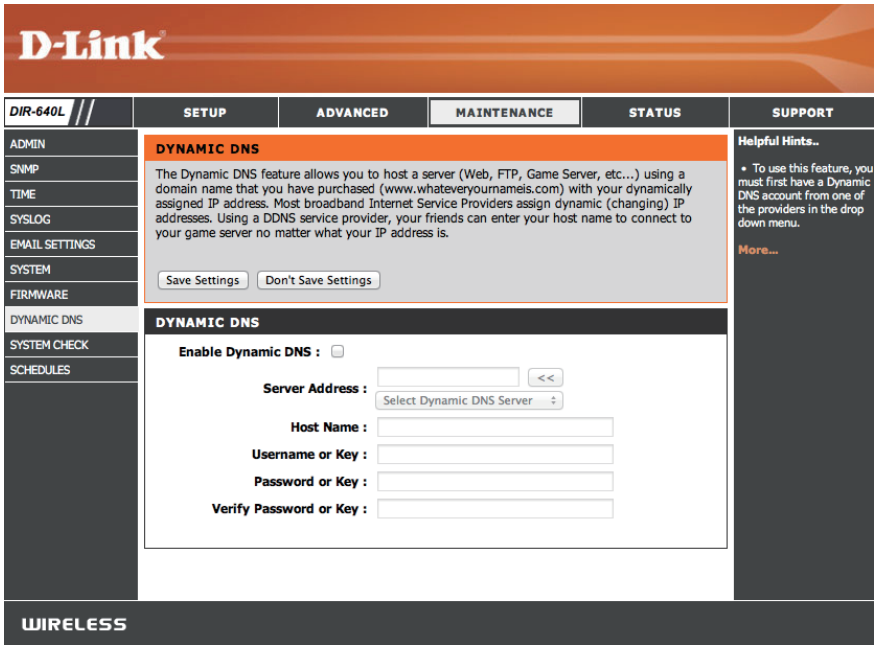
Enable Dynamic DNS: Dynamic Domain Name System is a method of keeping a domain name linked to a changing IP Address. Check the box to enable DDNS.

Server Address: Select your DDNS provider from the drop-down menu or enter the DDNS server address.

Host Name: Enter the Host Name that you registered with your DDNS service provider.

Username or Key: Enter the Username or key for your DDNS account.

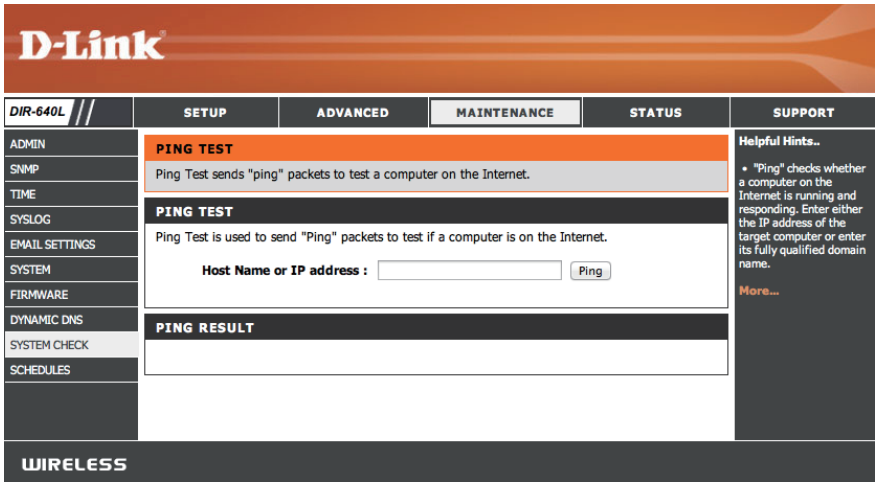
Password or Key: Enter the Password or key for your DDNS account.



System Check

Host Name or IP Address: The Ping Test is used to send Ping packets to test if a computer is on the Internet. Enter the IP address that you wish to Ping and click **Ping**.

Ping Result: The results of your ping attempts will be displayed here.



Schedule

Name: Enter a name for your new schedule.

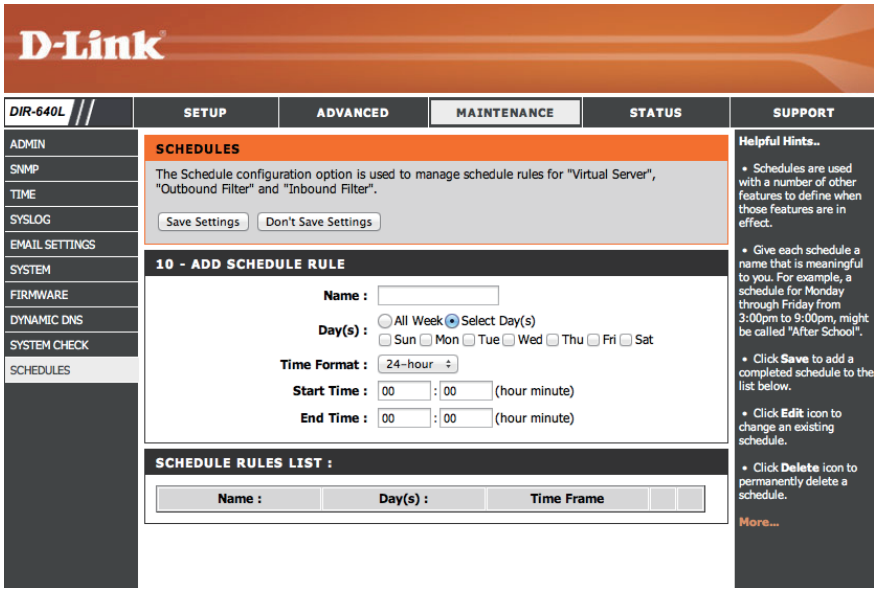
Days: Select a day, a range of days, or All Week to include every day.

Time Format: Choose a 24 hour or 12 hour clock-style.

Start Time: Enter a start time for your schedule.

End Time: Enter an end time for your schedule.

Schedule Rules List: The list of schedules will be listed here. Click the **Edit** icon to make changes or click the **Delete** icon to remove the schedule.



Status
Device Info

This page displays the current information for the DIR-640L. It will display the LAN, WAN (Internet), and Wireless information. If your Internet connection is set up for a Dynamic IP address then a **Release** button and a **Renew** button will be displayed. Use **Release** to disconnect from your ISP and use **Renew** to connect to your ISP.

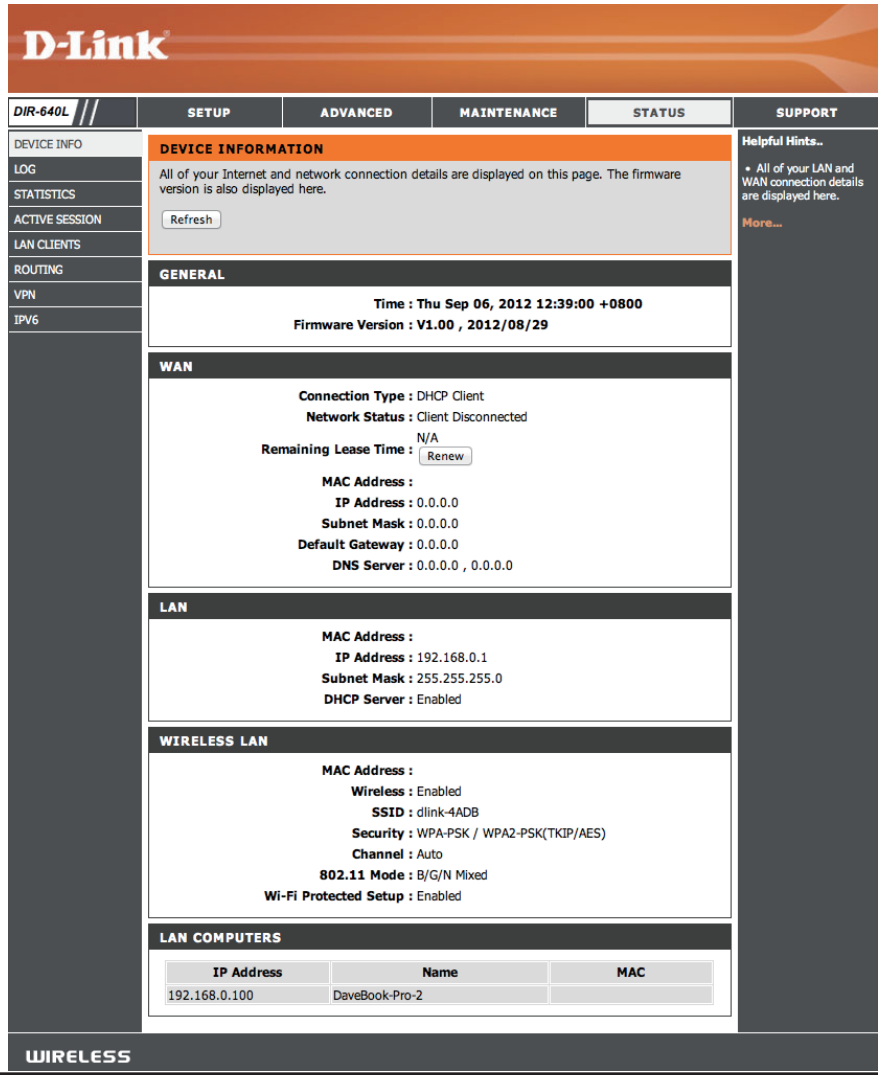
If your Internet connection is set up for PPPoE, a **Connect** button and a **Disconnect** button will be displayed. Use **Disconnect** to drop the PPPoE connection and use **Connect** to establish the PPPoE connection.

General: Displays the router's time and firmware version.

WAN: Displays the MAC address and the public IP settings.

LAN: Displays the MAC address and the private (local) IP settings for the router.

LAN Computers: Displays computers and devices that are connected to the router via Ethernet and that are receiving an IP address assigned by the router (DHCP).



Log

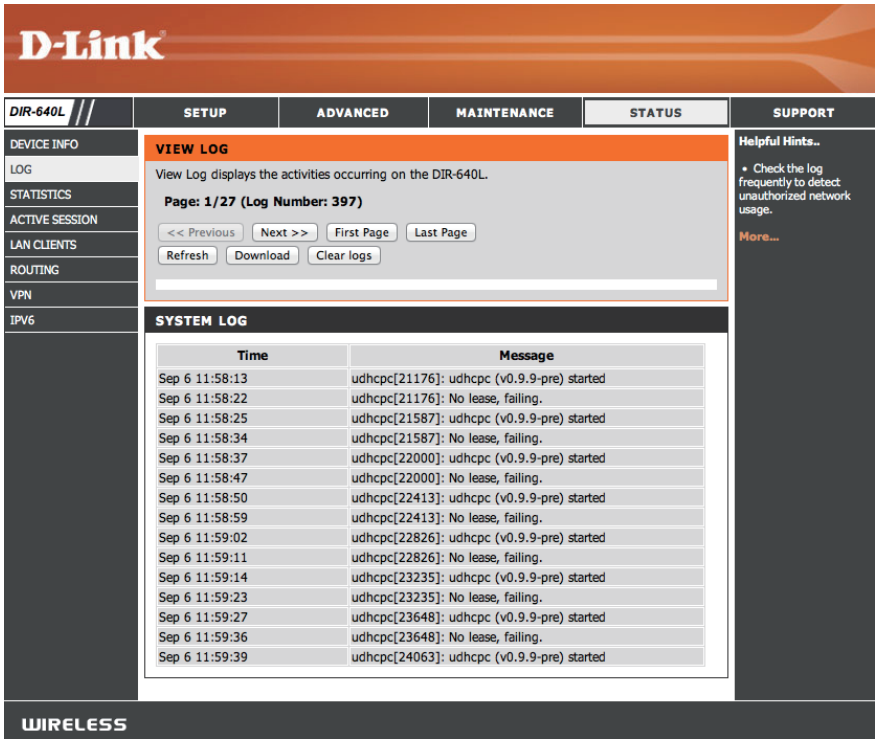
The router automatically logs (records) events of possible interest in its internal memory. If there isn't enough internal memory for all events, logs of older events are deleted but logs of the latest events are retained. The Logs option allows you to view the router logs. You can define what types of events you want to view and the level of the events to view. This router also has external Syslog Server support so you can send the log files to a computer on your network that is running a Syslog utility.

Refresh: Updates the log details on the screen so it displays any recent activity.

Download: This option will save the router log to a file on your computer.

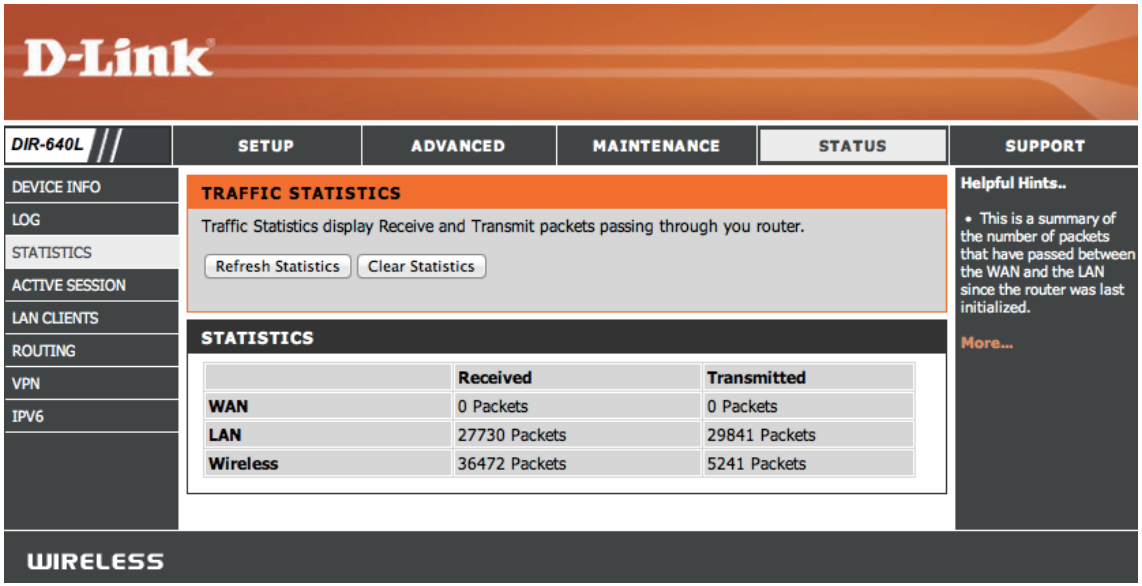
Clear Logs: Clears all of the log contents.

Link To Log Settings: This option will jump to **Tools** > **Syslog** settings.



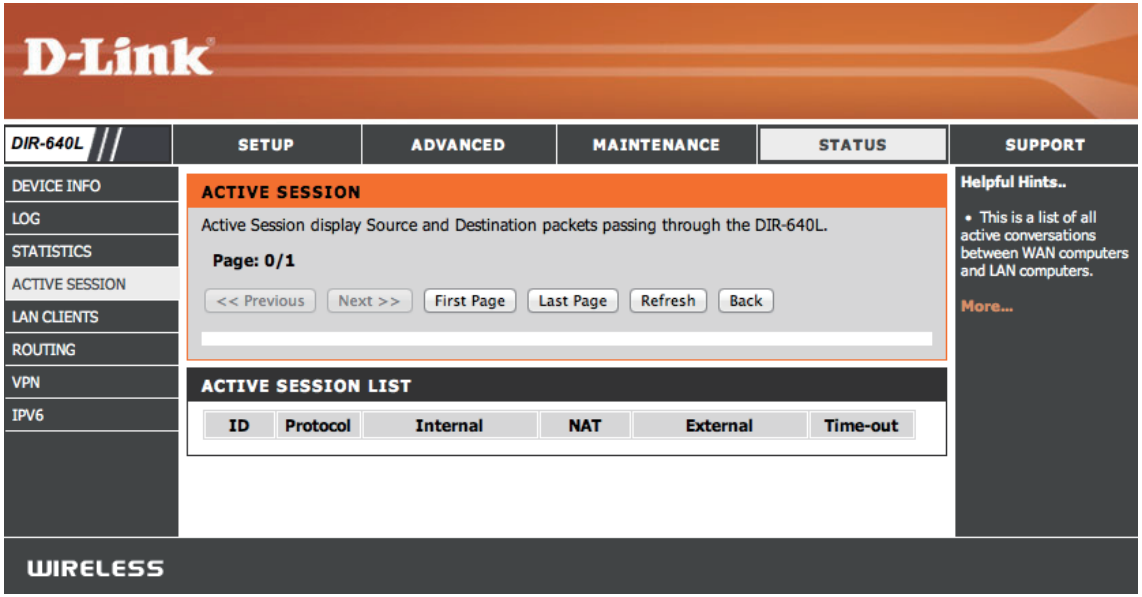
Statistics

The screen below displays the **Traffic Statistics**. Here you can view the amount of packets that pass through the DIR-640L on both the WAN, LAN ports and both the 802.11n/g and 802.11n/a wireless bands. The traffic counter will reset if the device is rebooted.



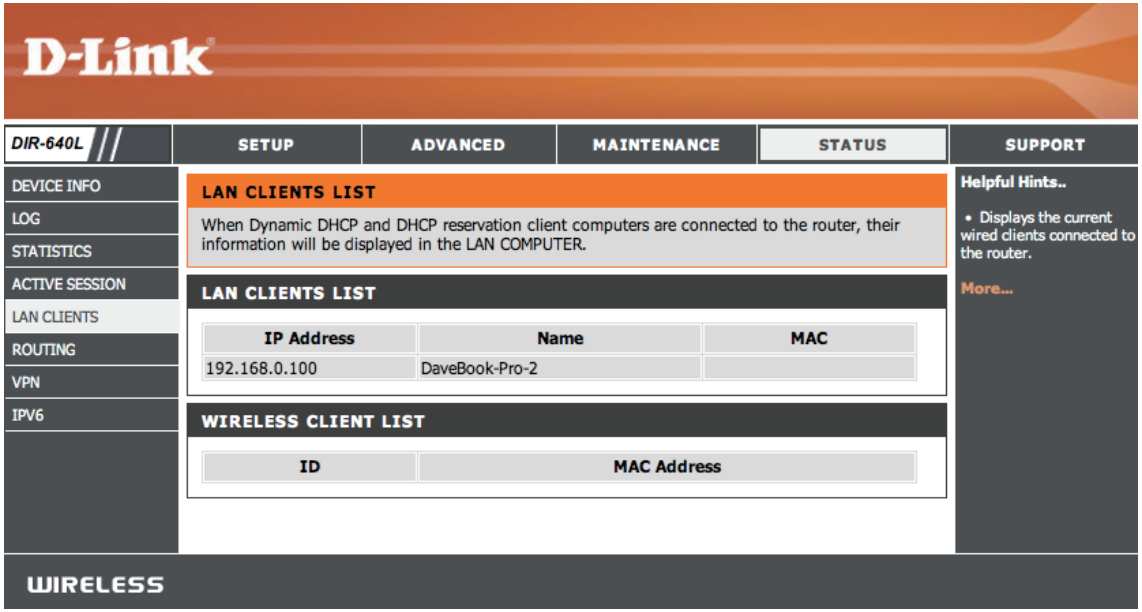
Active Session

The Active Session page displays full details of active Internet sessions through your router. An Internet session is a conversation between a program or application on a LAN-side computer and a program or application on a WAN-side computer.



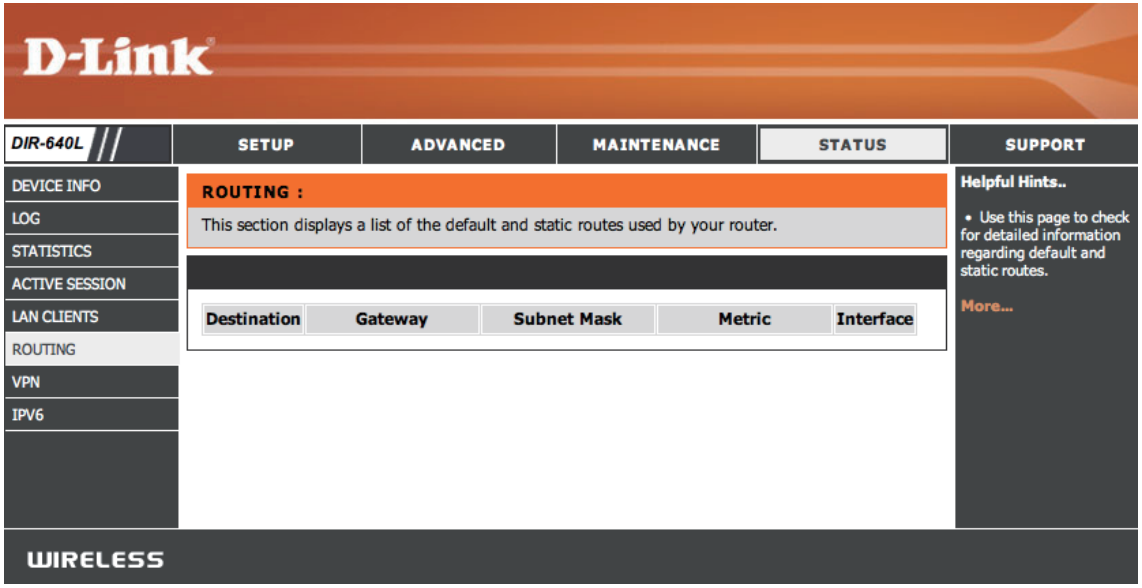
LAN Clients

This page will list the LAN clients currently connected to your network.



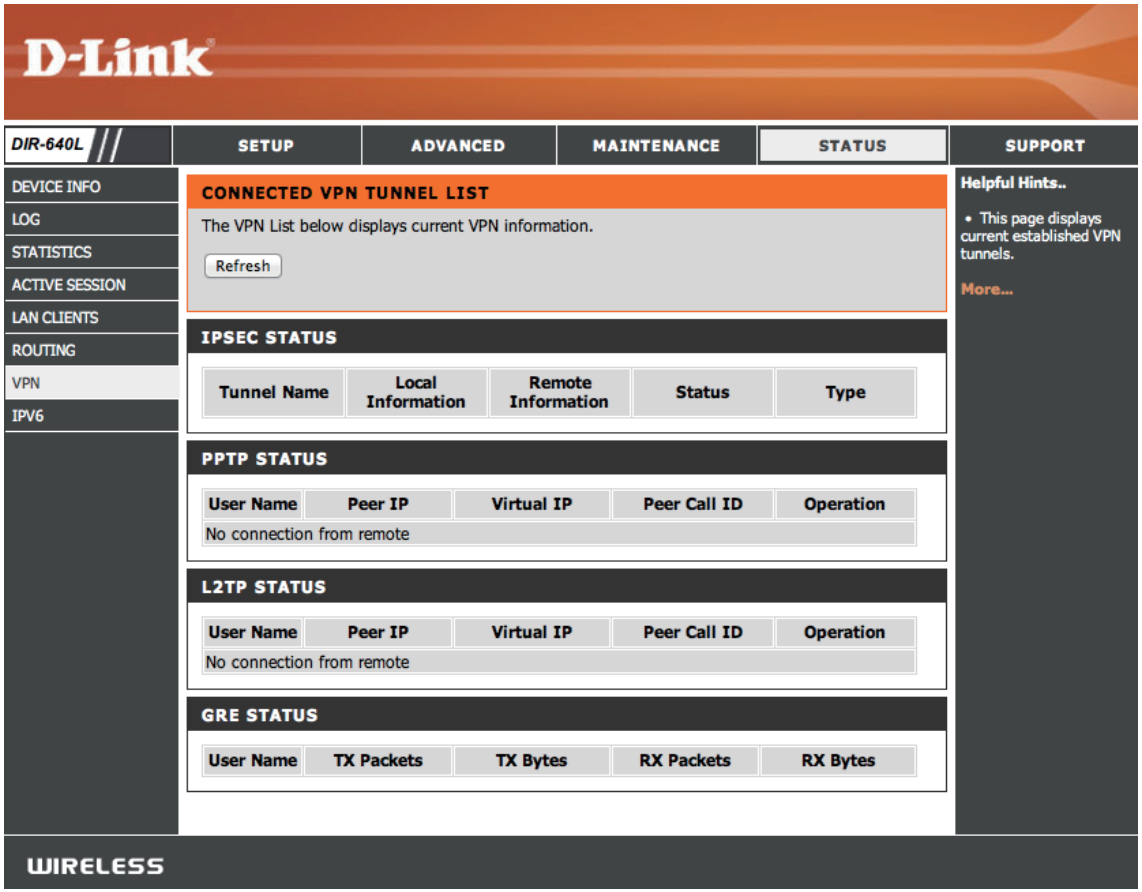
Routing

This page will display your current routing table.



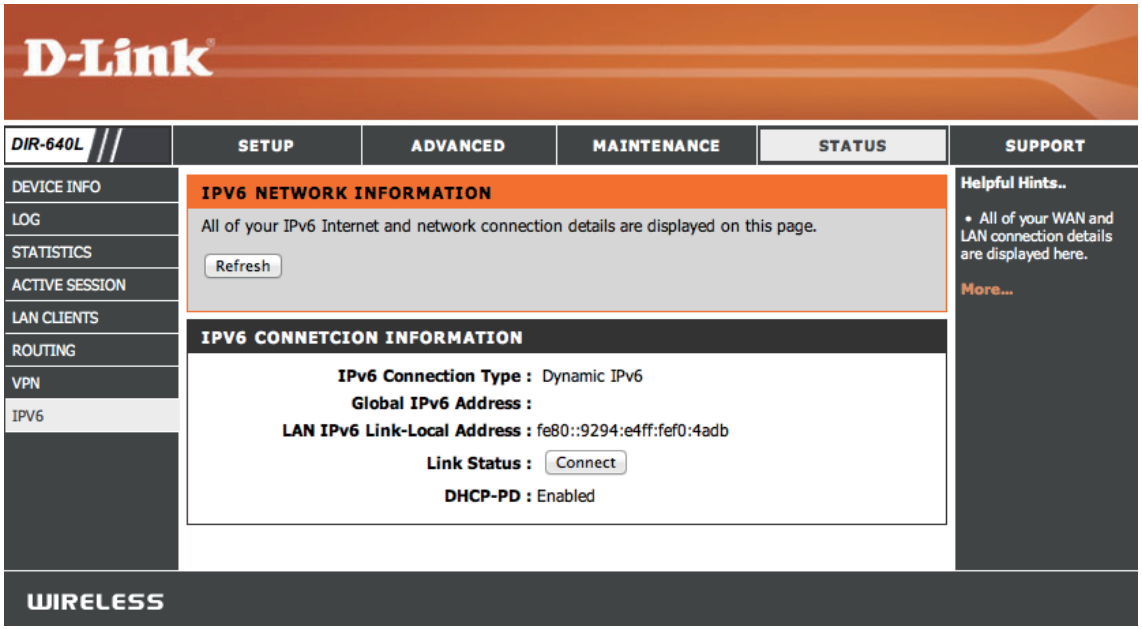
VPN

This page is where the router displays information on the the current VPN tunnels.



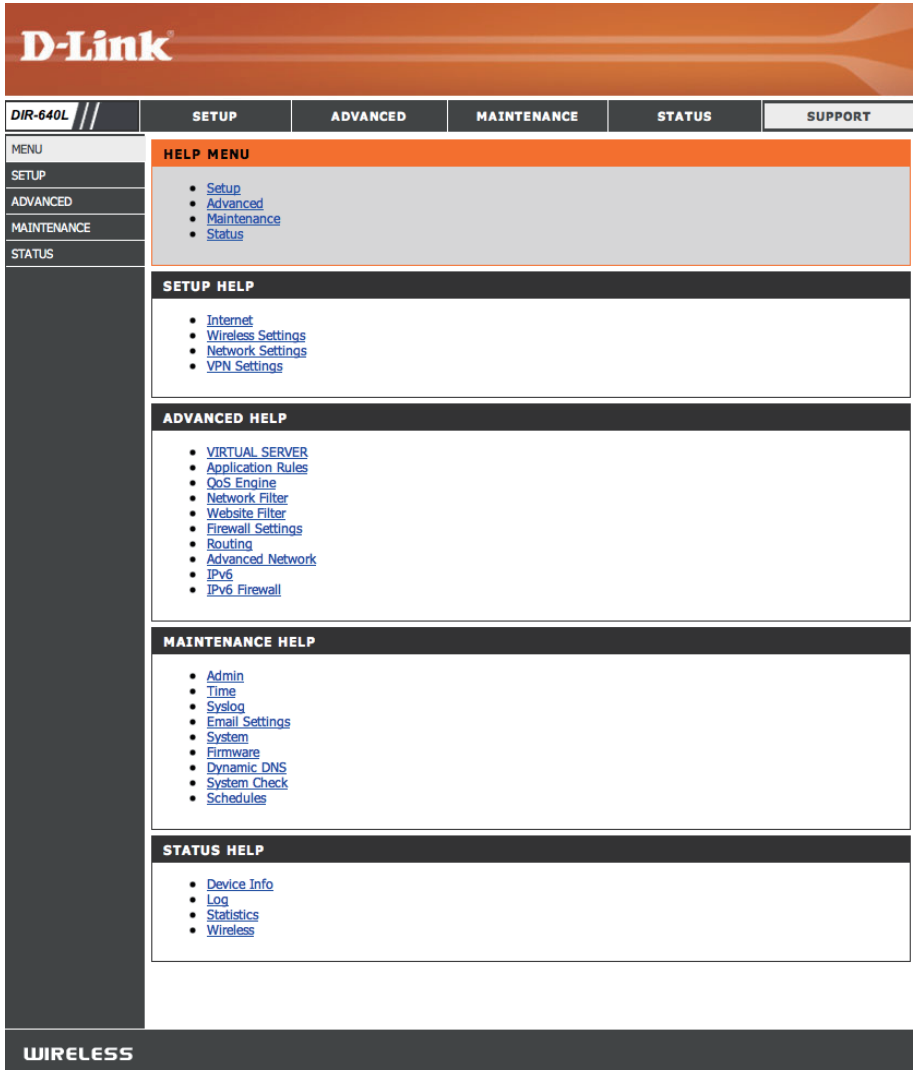
IPv6

The IPv6 page displays a summary of the Router's IPv6 settings and lists the IPv6 address and host name of any IPv6 clients.



Support

Click these links to get further instruction when configuring your DIR-640L Wireless N300 Cloud VPN Router.



Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the DIR-640L. Read the following descriptions if you are having problems. The examples below are illustrated in Windows® XP. If you have a different operating system, the screenshots on your computer will look similar to the following examples.

1. Why can't I access the web-based configuration utility?

When entering the IP address of the D-Link router (192.168.0.1 for example), you are not connecting to a website nor do you have to be connected to the Internet. The device has the utility built-in to a ROM chip in the device itself. Your computer must be on the same IP subnet to connect to the web-based utility.

- Make sure you have an updated Java-enabled web browser. We recommend the following:

  - Microsoft Internet Explorer® 6.0 and higher
  - Mozilla Firefox 3.0 and higher
  - Google™ Chrome 2.0 and higher
  - Apple Safari 3.0 and higher

- Verify physical connectivity by checking for solid link lights on the device. If you do not get a solid link light, try using a different cable or connect to a different port on the device if possible. If the computer is turned off, the link light may not be on.

- Disable any Internet security software running on the computer. Software firewalls such as Zone Alarm, Black Ice, Sygate, Norton Personal Firewall, and Windows® XP firewall may block access to the configuration pages. Check the help files included with your firewall software for more information on disabling or configuring it.

- Configure your Internet settings:
    - Go to **Start** > **Settings** > **Control Panel**. Double-click the **Internet Options** Icon. From the **Security** tab, click the button to restore the settings to their defaults.
    - Click the **Connection** tab and set the dial-up option to Never Dial a Connection. Click the LAN Settings button. Make sure nothing is checked. Click **OK**.
    - Go to the **Advanced** tab and click the button to restore these settings to their defaults. Click **OK** three times.
    - Close your web browser (if open) and open it.
- Access the web management. Open your web browser and enter the IP address of your D-Link router in the address bar. This should open the login page for your web management.
- If you still cannot access the configuration, unplug the power to the router for 10 seconds and plug back in. Wait about 30 seconds and try accessing the configuration. If you have multiple computers, try connecting using a different computer.

2. What can I do if I forgot my password?

If you forgot your password, you must reset your router. Unfortunately this process will change all your settings back to the factory defaults.

To reset the router, locate the reset button (hole) on the rear panel of the unit. With the router powered on, use a paperclip to hold the button down for 10 seconds. Release the button and the router will go through its reboot process. Wait about 30 seconds to access the router. The default IP address is 192.168.0.1. When logging in, the username is **admin** and the password is **should be left empty**.

3. Why can't I connect to certain sites or send and receive emails when connecting through my router?

If you are having a problem sending or receiving email, or connecting to secure sites such as eBay, banking sites, and Hotmail, we suggest lowering the MTU in increments of ten (Ex. 1492, 1482, 1472, etc).

To find the proper MTU Size, you'll have to do a special ping of the destination you're trying to go to. A destination could be another computer, or a URL.

- Click on **Start** and then click **Run**.
- Windows® 95, 98, and Me users type in **command** (Windows® NT, 2000, XP, Vista®, and 7 users type in **cmd**) and press **Enter** (or click **OK**).
- Once the window opens, you'll need to do a special ping. Use the following syntax:

ping [url] [-f] [-l] [MTU value]

Example: **ping yahoo.com -f -l 1472**

```
C:\>ping yahoo.com -f -l 1482

Pinging yahoo.com [66.94.234.13] with 1482 bytes of data:

Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.
Packet needs to be fragmented but DF set.

Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms

C:\>ping yahoo.com -f -l 1472

Pinging yahoo.com [66.94.234.13] with 1472 bytes of data:

Reply from 66.94.234.13: bytes=1472 time=93ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=109ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=125ms TTL=52
Reply from 66.94.234.13: bytes=1472 time=203ms TTL=52

Ping statistics for 66.94.234.13:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 93ms, Maximum =  203ms, Average =  132ms

C:\>
```

You should start at 1472 and work your way down by 10 each time. Once you get a reply, go up by 2 until you get a fragmented packet. Take that value and add 28 to the value to account for the various TCP/IP headers. For example, lets say that 1452 was the proper value, the actual MTU size would be 1480, which is the optimum for the network we're working with (1452+28=1480).

Once you find your MTU, you can now configure your router with the proper MTU size.

To change the MTU rate on your router follow the steps below:

- Open your browser, enter the IP address of your router (http://192.168.0.1) and click **OK**.
- Enter your username (admin) and password (should be left empty). Click **OK** to enter the web configuration page for the device.
- Click on **Setup** and then click **Manual Configure**.

Wireless Basics

D-Link wireless products are based on industry standards to provide easy-to-use and compatible high-speed wireless connectivity within your home, business or public access wireless networks. Strictly adhering to the IEEE standard, the D-Link wireless family of products will allow you to securely access the data you want, when and where you want it. You will be able to enjoy the freedom that wireless networking delivers.

A wireless local area network (WLAN) is a cellular computer network that transmits and receives data with radio signals instead of wires. Wireless LANs are used increasingly in both home and office environments, and public areas such as airports, coffee shops and universities. Innovative ways to utilize WLAN technology are helping people to work and communicate more efficiently. Increased mobility and the absence of cabling and other fixed infrastructure have proven to be beneficial for many users.

Wireless users can use the same applications they use on a wired network. Wireless adapter cards used on laptop and desktop systems support the same protocols as Ethernet adapter cards.

Under many circumstances, it may be desirable for mobile network devices to link to a conventional Ethernet LAN in order to use servers, printers or an Internet connection supplied through the wired LAN. A Wireless Router is a device used to provide this link.

What is Wireless?

Wireless or Wi-Fi technology is another way of connecting your computer to the network without using wires. Wi-Fi uses radio frequency to connect wirelessly, so you have the freedom to connect computers anywhere in your home or office network.

Why D-Link Wireless?

D-Link is the worldwide leader and award winning designer, developer, and manufacturer of networking products. D-Link delivers the performance you need at a price you can afford. D-Link has all the products you need to build your network.

How does wireless work?

Wireless works similar to how cordless phone work, through radio signals to transmit data from one point A to point B. But wireless technology has restrictions as to how you can access the network. You must be within the wireless network range area to be able to connect your computer. There are two different types of wireless networks Wireless Local Area Network (WLAN), and Wireless Personal Area Network (WPAN).

Wireless Local Area Network (WLAN)

In a wireless local area network, a device called an Access Point (AP) connects computers to the network. The access point has a small antenna attached to it, which allows it to transmit data back and forth over radio signals. With an indoor access point as seen in the picture, the signal can travel up to 300 feet. With an outdoor access point the signal can reach out up to 30 miles to serve places like manufacturing plants, industrial locations, college and high school campuses, airports, golf courses, and many other outdoor venues.

Wireless Personal Area Network (WPAN)

Bluetooth is the industry standard wireless technology used for WPAN. Bluetooth devices in WPAN operate in a range up to 30 feet away.

Compared to WLAN the speed and wireless operation range are both less than WLAN, but in return it doesn't use nearly as much power which makes it ideal for personal devices, such as mobile phones, PDAs, headphones, laptops, speakers, and other devices that operate on batteries.

Who uses wireless?

Wireless technology as become so popular in recent years that almost everyone is using it, whether it's for home, office, business, D-Link has a wireless solution for it.

Home

- Gives everyone at home broadband access
- Surf the web, check email, instant message, etc.
- Gets rid of the cables around the house
- Simple and easy to use

Small Office and Home Office

- Stay on top of everything at home as you would at office
- Remotely access your office network from home
- Share Internet connection and printer with multiple computers
- No need to dedicate office space

Where is wireless used?

Wireless technology is expanding everywhere not just at home or office. People like the freedom of mobility and it's becoming so popular that more and more public facilities now provide wireless access to attract people. The wireless connection in public places is usually called "hotspots".

Using a D-Link Cardbus Adapter with your laptop, you can access the hotspot to connect to Internet from remote locations like: Airports, Hotels, Coffee Shops, Libraries, Restaurants, and Convention Centers.

Wireless network is easy to setup, but if you're installing it for the first time it could be quite a task not knowing where to start. That's why we've put together a few setup steps and tips to help you through the process of setting up a wireless network.

Tips

Here are a few things to keep in mind, when you install a wireless network.

Centralize your router or Access Point

Make sure you place the router/access point in a centralized location within your network for the best performance. Try to place the router/access point as high as possible in the room, so the signal gets dispersed throughout your home. If you have a two-story home, you may need a repeater to boost the signal to extend the range.

Eliminate Interference

Place home appliances such as cordless telephones, microwaves, and televisions as far away as possible from the router/access point. This would significantly reduce any interference that the appliances might cause since they operate on same frequency.

Security

Don't let you next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on the WPA or WEP security feature on the router. Refer to product manual for detail information on how to set it up.

Wireless Modes

There are basically two modes of networking:

- **Infrastructure** – All wireless clients will connect to an access point or wireless router.

- **Ad-Hoc** – Directly connecting to another computer, for peer-to-peer communication, using wireless network adapters on each computer, such as two or more DIR-640L wireless network Cardbus adapters.

An Infrastructure network contains an Access Point or wireless router. All the wireless devices, or clients, will connect to the wireless router or access point.

An Ad-Hoc network contains only clients, such as laptops with wireless cardbus adapters. All the adapters must be in Ad-Hoc mode to communicate.

Networking Basics

Check your IP address

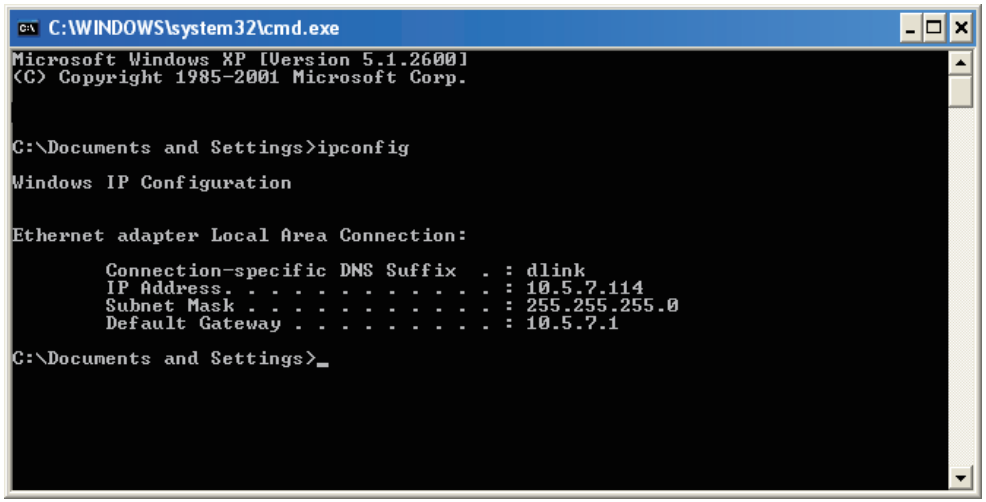
After you install your new D-Link adapter, by default, the TCP/IP settings should be set to obtain an IP address from a DHCP server (i.e. wireless router) automatically. To verify your IP address, please follow the steps below.

Click on **Start** > **Run**. In the run box type ***cmd*** and click **OK.** (Windows® 7/Vista® users type *cmd* in the **Start Search** box.)

At the prompt, type ***ipconfig*** and press **Enter**.

This will display the IP address, subnet mask, and the default gateway of your adapter.

If the address is 0.0.0.0, check your adapter installation, security settings, and the settings on your router. Some firewall software programs may block a DHCP request on newly installed adapters.



Statically Assign an IP address

If you are not using a DHCP capable gateway/router, or you need to assign a static IP address, please follow the steps below:

Step 1
Windows® 7 - Click on **Start** > **Control Panel** > **Network and Internet** > **Network and Sharing Center**.
Windows Vista® - Click on **Start** > **Control Panel** > **Network and Internet** > **Network and Sharing Center** > **Manage Network Connections.**
Windows® XP - Click on **Start** > **Control Panel** > **Network Connections**.
Windows® 2000 - From the desktop, right-click **My Network Places** > **Properties**.

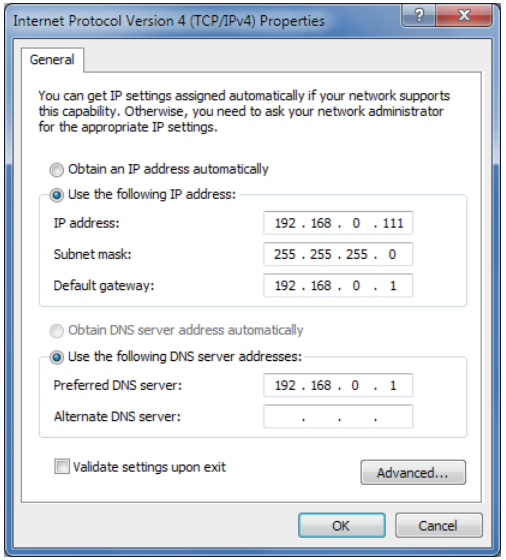
Step 2
Right-click on the **Local Area Connection** which represents your network adapter and select **Properties**.

Step 3
Highlight **Internet Protocol (TCP/IP)** and click **Properties**.

Step 4
Click **Use the following IP address** and enter an IP address that is on the same subnet as your network or the LAN IP address on your router.

Example: The router's LAN IP address is 192.168.0.1, make your IP address 192.168.0.X where X is a number between 2 and 99. Make sure that the number you choose is not in use on the network. Set the Default Gateway the same as the LAN IP address of your router (I.E. 192.168.0.1).

Set Primary DNS the same as the LAN IP address of your router (192.168.0.1). The Secondary DNS is not needed or you may enter a DNS server from your ISP.



Step 5
Click **OK** twice to save your settings.

Technical Specifications

Standards

- IEEE 802.11n
- IEEE 802.11g
- IEEE 802.11b
- IEEE 802.3
- IEEE 802.3u

Security

- WPA™ - Personal/Enterprise
- WPA2™ - Personal/Enterprise

Wireless Signal Rates[1]

IEEE 802.11n 2.4GHz(HT20/40):

- 144.4 Mbps (300)
- 115.6 Mbps (240)
- 72.2 Mbps (150)
- 57.8 Mbps (120)
- 28.9 Mbps (60)
- 14.4 Mbps (30)
- 130 Mbps (270)
- 86.7 Mbps (180)
- 65 Mbps (135)
- 43.3 Mbps (90)
- 21.7 Mbps (45)
- 7.2 Mbps (15)

IEEE 802.11g:

- 54 Mbps
- 48 Mbps
- 36 Mbps
- 24 Mbps
- 18 Mbps
- 12 Mbps
- 11 Mbps
- 9 Mbps
- 6 Mbps
- 5.5 Mbps
- 2 Mbps
- 1 Mbps

Frequency Range[2] (North America)

- 2.412 GHz to 2.462 GHz (802.11g/n)

External Antenna Type

- Two (2) detachable Antennas

Operating Temperature

- 32°F to 104°F (0°C to 40°C)

Humidity

- 95% maximum (non-condensing)

Safety & Emissions

- FCC
- CE

Dimensions

- L = 7.4 inches
- W = 4.4 inches
- H = 1.1 inches

Warranty

- 1 Year

1 Maximum wireless signal rate derived from IEEE Standard 802.11a, 802.11g, and 802.11n specifications. Actual data throughput will vary. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead, lower actual data throughput rate. Environmental factors will adversely affect wireless signal range.

2 Frequency Range varies depending on country's regulation

3 The DIR-640L does not include 5.25-5.35 GHz & 5.47-5.725 GHz in some regions.

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17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

Contacting Technical Support

U.S. and Canadian customers can contact D-Link technical support through our web site or by phone.

Before you contact technical support, please have the following ready:

- Model number of the product (e.g. DIR-140L)
- Hardware Revision (located on the label on the bottom of the router (e.g. rev A1))
- Serial Number (s/n number located on the label on the bottom of the router).

You can find software updates and user documentation on the D-Link website as well as frequently asked questions and answers to technical issues.

For customers within the United States:

Phone Support:
(877) 354-6555

Internet Support:
http://support.dlink.com

For customers within Canada:

Phone Support:
(800) 361-5265

Internet Support:
http://support.dlink.ca

Warranty

Subject to the terms and conditions set forth herein, D-Link Systems, Inc. (“D-Link”) provides this Limited Warranty:

- Only to the person or entity that originally purchased the product from D-Link or its authorized reseller or distributor, and
- Only for products purchased and delivered within the fifty states of the United States, the District of Columbia, U.S. Possessions or Protectorates, U.S. Military Installations, or addresses with an APO or FPO.

Limited Warranty:

D-Link warrants that the hardware portion of the D-Link product described below (“Hardware”) will be free from material defects in workmanship and materials under normal use from the date of original retail purchase of the product, for the period set forth below (“Warranty Period”), except as otherwise stated herein.

- Hardware (excluding power supplies and fans): One (1) year
- Power supplies and fans: One (1) year
- Spare parts and spare kits: Ninety (90) days

The customer’s sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link’s option, to repair or replace the defective Hardware during the Warranty Period at no charge to the original owner or to refund the actual purchase price paid. Any repair or replacement will be rendered by D-Link at an Authorized D-Link Service Office. The replacement hardware need not be new or have an identical make, model or part. D-Link may, at its option, replace the defective Hardware or any part thereof with any reconditioned product that D-Link reasonably determines is substantially equivalent (or superior) in all material respects to the defective Hardware. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer, and is subject to the same limitations and exclusions. If a material defect is incapable of correction, or if D-Link determines that it is not practical to repair or replace the defective Hardware, the actual price paid by the original purchaser for the defective Hardware will be refunded by D-Link upon return to D-Link of the defective Hardware. All Hardware or part thereof that is replaced by D-Link, or for which the purchase price is refunded, shall become the property of D-Link upon replacement or refund.

Limited Software Warranty:

D-Link warrants that the software portion of the product ("Software") will substantially conform to D-Link's then current functional specifications for the Software, as set forth in the applicable documentation, from the date of original retail purchase of the Software for a period of ninety (90) days ("Software Warranty Period"), provided that the Software is properly installed on approved hardware and operated as contemplated in its documentation. D-Link further warrants that, during the Software Warranty Period, the magnetic media on which D-Link delivers the Software will be free of physical defects. The customer's sole and exclusive remedy and the entire liability of D-Link and its suppliers under this Limited Warranty will be, at D-Link's option, to replace the non-conforming Software (or defective media) with software that substantially conforms to D-Link's functional specifications for the Software or to refund the portion of the actual purchase price paid that is attributable to the Software. Except as otherwise agreed by D-Link in writing, the replacement Software is provided only to the original licensee, and is subject to the terms and conditions of the license granted by D-Link for the Software. Replacement Software will be warranted for the remainder of the original Warranty Period and is subject to the same limitations and exclusions. If a material non-conformance is incapable of correction, or if D-Link determines in its sole discretion that it is not practical to replace the non-conforming Software, the price paid by the original licensee for the non-conforming Software will be refunded by D-Link; provided that the non-conforming Software (and all copies thereof) is first returned to D-Link. The license granted respecting any Software for which a refund is given automatically terminates.

Non-Applicability of Warranty:

The Limited Warranty provided hereunder for Hardware and Software portions of D-Link's products will not be applied to and does not cover any refurbished product and any product purchased through the inventory clearance or liquidation sale or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product and in that case, the product is being sold "As-Is" without any warranty whatsoever including, without limitation, the Limited Warranty as described herein, notwithstanding anything stated herein to the contrary.

Submitting A Claim:

The customer shall return the product to the original purchase point based on its return policy. In case the return policy period has expired and the product is within warranty, the customer shall submit a claim to D-Link as outlined below:

- The customer must submit with the product as part of the claim a written description of the Hardware defect or Software nonconformance in sufficient detail to allow DLink to confirm the same, along with proof of purchase of the product (such as a copy of the dated purchase invoice for the product) if the product is not registered.

- The customer must obtain a Case ID Number from D-Link Technical Support at 1-877-354-6555, who will attempt to assist the customer in resolving any suspected defects with the product. If the product is considered defective, the customer must obtain a Return Material Authorization ("RMA") number by completing the RMA form and entering the assigned Case ID Number at https://rma.dlink.com/.

- After an RMA number is issued, the defective product must be packaged securely in the original or other suitable shipping package to ensure that it will not be damaged in transit, and the RMA number must be prominently marked on the outside of the package. Do not include any manuals or accessories in the shipping package. D-Link will only replace the defective portion of the product and will not ship back any accessories.

- The customer is responsible for all in-bound shipping charges to D-Link. No Cash on Delivery ("COD") is allowed. Products sent COD will either be rejected by D-Link or become the property of D-Link. Products shall be fully insured by the customer and shipped to D-Link Systems, Inc., 17595 Mt. Herrmann, Fountain Valley, CA 92708. D-Link will not be held responsible for any packages that are lost in transit to D-Link. The repaired or replaced packages will be shipped to the customer via UPS Ground or any common carrier selected by D-Link. Return shipping charges shall be prepaid by D-Link if you use an address in the United States, otherwise we will ship the product to you freight collect. Expedited shipping is available upon request and provided shipping charges are prepaid by the customer. D-Link may reject or return any product that is not packaged and shipped in strict compliance with the foregoing requirements, or for which an RMA number is not visible from the outside of the package. The product owner agrees to pay D-Link's reasonable handling and return shipping charges for any product that is not packaged and shipped in accordance with the foregoing requirements, or that is determined by D-Link not to be defective or non-conforming.

What Is Not Covered:

The Limited Warranty provided herein by D-Link does not cover:
Products that, in D-Link's judgment, have been subjected to abuse, accident, alteration, modification, tampering, negligence, misuse, faulty installation, lack of reasonable care, repair or service in any way that is not contemplated in the documentation for the product, or if the model or serial number has been altered, tampered with, defaced or removed; Initial installation, installation and removal of the product for repair, and shipping costs; Operational adjustments covered in the operating manual for the product, and normal maintenance; Damage that occurs in shipment, due to act of God, failures due to power surge, and cosmetic damage; Any hardware, software, firmware or other products or services provided by anyone other than D-Link; and Products that have been purchased from inventory clearance or liquidation sales or other sales in which D-Link, the sellers, or the liquidators expressly disclaim their warranty obligation pertaining to the product.

While necessary maintenance or repairs on your Product can be performed by any company, we recommend that you use only an Authorized D-Link Service Office. Improper or incorrectly performed maintenance or repair voids this Limited Warranty.

Disclaimer of Other Warranties:

EXCEPT FOR THE LIMITED WARRANTY SPECIFIED HEREIN, THE PRODUCT IS PROVIDED "AS-IS" WITHOUT ANY WARRANTY OF ANY KIND WHATSOEVER INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.

IF ANY IMPLIED WARRANTY CANNOT BE DISCLAIMED IN ANY TERRITORY WHERE A PRODUCT IS SOLD, THE DURATION OF SUCH IMPLIED WARRANTY SHALL BE LIMITED TO THE DURATION OF THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. EXCEPT AS EXPRESSLY COVERED UNDER THE LIMITED WARRANTY PROVIDED HEREIN, THE ENTIRE RISK AS TO THE QUALITY, SELECTION AND PERFORMANCE OF THE PRODUCT IS WITH THE PURCHASER OF THE PRODUCT.

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TO THE MAXIMUM EXTENT PERMITTED BY LAW, D-LINK IS NOT LIABLE UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR ANY LOSS OF USE OF THE PRODUCT, INCONVENIENCE OR DAMAGES OF ANY CHARACTER, WHETHER DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF GOODWILL, LOSS OF REVENUE OR PROFIT, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, FAILURE OF OTHER EQUIPMENT OR COMPUTER PROGRAMS TO WHICH D-LINK'S PRODUCT IS CONNECTED WITH, LOSS OF INFORMATION OR DATA CONTAINED IN, STORED ON, OR INTEGRATED WITH ANY PRODUCT RETURNED TO D-LINK FOR WARRANTY SERVICE) RESULTING FROM THE USE OF THE PRODUCT, RELATING TO WARRANTY SERVICE, OR ARISING OUT OF ANY BREACH OF THIS LIMITED WARRANTY, EVEN IF D-LINK HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE SOLE REMEDY FOR A BREACH OF THE FOREGOING LIMITED WARRANTY IS REPAIR, REPLACEMENT OR REFUND OF THE DEFECTIVE OR NONCONFORMING PRODUCT. THE MAXIMUM LIABILITY OF D-LINK UNDER THIS WARRANTY IS LIMITED TO THE PURCHASE PRICE OF THE PRODUCT COVERED BY THE WARRANTY. THE FOREGOING EXPRESS WRITTEN WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ANY OTHER WARRANTIES OR REMEDIES, EXPRESS, IMPLIED OR STATUTORY.

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CE Mark Warning:

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC Statement:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

For detailed warranty information applicable to products purchased outside the United States, please contact the corresponding local D-Link office.

Registration

Register your product online at registration.dlink.com

Product registration is entirely voluntary and failure to complete or return this form will not diminish your warranty rights.